

## EIC SEARCH RESULTS

Serial No. 10/718,804 – Demineralized bone implants

Searcher: Ethel Leslie

Date: March 19, 2009

### Inventor Search

#### Search Strategy

Set	Items	Description
S1	1561	S AU=(BOYER M? OR BOYER, M?)
S2	5175	S AU=(PAUL D? OR PAUL, D?)
S3	112	S AU=(ANGELUCCI C? OR ANGELUCCI, C?)
S4	23	S S1 AND S2 AND S3
S5	15	S S4 FROM 350, 347
S6	8	S S4 NOT S5
S7	6	RD (unique items)
S8	98	S S1:S3 AND ((BONE? ? OR OSSEOUS? OR OSTEO?) (5N) (IMPLANT? OR BLOCK? ? OR PELLET? OR PROSTHES? OR GRAFT? OR AUTOGRAFT? OR TRANSPLANT? OR XENOGRAFT? OR ALLOGRAFT? OR HOMOGRAFT?))
S9	82	S S8 NOT S4
S10	10	S S9 FROM 350, 347
S11	72	S S9 NOT S10
S12	48	RD (unique items)

[File 350] **Derwent WPIX** 1963-2008/UD=200915

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[File 347] **JAPIO** Dec 1976-2008/Oct(Updated 090220)

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[File 155] **MEDLINE (R)** 1950-2009/Mar 16

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[File 73] **EMBASE** 1974-2009/Mar 17

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[File 5] **Biosis Previews (R)** 1926-2009/Mar W3

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[File 8] **Ei Compendex (R)** 1884-2009/Mar W1

(c) 2009 Elsevier Eng. Info. Inc. All rights reserved.

[File 35] **Dissertation Abs Online** 1861-2009/Feb

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[File 65] **Inside Conferences** 1993-2009/Mar 18

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#### Search Results

5/25/1 (Item 1 from file: 350) [Links](#)

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Derwent WPIX

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0018591463 & Drawing available

WPI Acc no: 2009-A89861/200904

Related WPI Acc No: 2003-110482; 2002-740210; 2002-740212; 2002-740213; 2004-419519; 2004-728388; 2005-404640

**Implant for treating bone fractures and bone defects, comprises unitary section of cortical bone having mineralized first portion and partially demineralized second portion**

Patent Assignee: ANGELUCCI C M (ANGE-I); BOYER M L (BOYE-I); PAUL D C (PAUL-I)

Inventor: ANGELUCCI C M; BOYER M L; PAUL D C

Patent Family ( 1 patents, 1 & countries )

Patent Number	Kind	Date	Update	Type
US 20090005882	A1	20090101	200904	B

US 20090005882

Local Applications (no., kind, date): US 2001271745 P 20010228; US 2001927333 A 20010813; US 200545404 A 20050131 ; US 2008206435 A 20080908

Priority Applications (no., kind, date): US 2001271745 P 20010228; US 2001927333 A 20010813; US 200545404 A 20050131; US 2008206435 A 20080908

#### Alerting Abstract US A1

NOVELTY - **Implant** comprises unitary section of **cortical bone** having mineralized first portion and at least partially demineralized second portion, where mineralized portion includes plurality of slits to facilitate bending of unitary section.

USE - The **implant**, preferably **allograft implant** is useful for **treating bone fractures** caused due to **bone loss** or **injuries**, and **bone defects** caused due to trauma or infection.

5/25/2 (Item 2 from file: 350) [Links](#)

Fulltext available through: [Order File History](#)

Derwent WPIX

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0015056611 & Drawing available

WPI Acc no: 2005-404640/200541

Related WPI Acc No: 2002-740210; 2002-740212; 2002-740213; 2003-110482; 2004-419519; 2004-728388; 2009-A89861

**Demineralized bone-derived sheet implant use for treating bone fractures and defects, has bone strips with bone grain orientations that are disposed transverse to the grain orientations of other bone strips**

Patent Assignee: SYNTHES (SYNT-N)

Inventor: ANGELUCCI C M; BOYER M L; PAUL D C

Patent Family ( 1 patents, 1 & countries )

Patent Number	Kind	Date	Update	Type
US 20050131548	A1	20050616	200541	B

US 20050131548

Local Applications (no., kind, date): US 2001271745 P 20010228; US 2001927333 A 20010813; US 200545404 A 20050131

Priority Applications (no., kind, date): US 2001271745 P 20010228; US 2001927333 A 20010813; US 200545404 A 20050131

#### Alerting Abstract US A1

NOVELTY - The demineralized **bone-derived sheet implant** (70) includes strips (72,74) of **bone** each having a **bone grain orientation**. The **bone grain orientations** of the strips are disposed transverse to the grain orientation

of the other strips. The strips are interwoven. Each strip is selected from a group consisting of mineralized **bone**, demineralized **bone**, partially demineralized **bone**.

USE - Use for **treating bone** fractures and defects.

ADVANTAGE - Provides **sheet implant** formed from partially or fully demineralized **cancellous bone**. Provides an **implant** that has been selectively masked during demineralization so that portions of the **bone** are at least partially demineralized while other portions substantially remain in the mineralized state.

DESCRIPTION OF DRAWINGS - The figure shows the woven **bone sheet implant**.

70 Demineralized **bone**-derived **sheet implant**

72,74 Strips

5/25/4 (Item 4 from file: 350) [Links](#)

Fulltext available through: [Order File History](#)

Derwent WPIX

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0014546432 & [Drawing available](#)

WPI Acc no: 2004-728388/200471

Related WPI Acc No: 2002-740210; 2002-740212; 2002-740213; 2003-110482; 2004-419519; 2005-404640; 2009-A89861

**Allograft implant for maintaining distance between cut spinal bones in spinal column during laminoplasty procedure, has bone flap provided to plate ends and fixable to spinal bones by fasteners to ensure distance between bones**

Patent Assignee: ANGELUCCI C M (ANGE-I); BOYER M L (BOYE-I); PAUL D C (PAUL-I); RYAN C J (RYAN-I); SINHA A (SINH-I); WALTHER M (WALT-I)

Inventor: **ANGELUCCI C M; BOYER M L; PAUL D C; RYAN C J; SINHA A; WALTHER M**

Patent Family ( 1 patents, 1 & countries )

Patent Number	Kind	Date	Update	Type
US 20040210222	A1	20041021	200471	B

US 20040210222

Local Applications (no., kind, date): US 2001271745 P 20010228; US 2001942137 A 20010829; US 2004844249 A 20040512

Priority Applications (no., kind, date): US 2001271745 P 20010228; US 2001942137 A 20010829; US 2004844249 A 20040512

#### Alerting Abstract US A1

NOVELTY - The **allograft implant** (30) has a length that is **sized** to span between the spinal **bones** of a vertebra. **Bone** flaps (31A,31B) are provided to the **implant** ends (32A,32B) to engage with the spinal **bones**. Each **bone** flap is provided with a fastener hole (36A,36B) for receiving a fastener that fixes each flap to the respective **bone** in order to maintain a predetermined distance between the **bones**.

DESCRIPTION - An INDEPENDENT CLAIM is also included for a distance maintaining procedure between spinal **bones** of spinal column using **implant**.

USE - For maintaining distance between cut spinal **bones** in spinal column during laminoplasty procedure.

ADVANTAGE - Pressure on spinal cord caused by impinging of vertebral **bone** can be eliminated through expansion of spinal canal by using **implant** to maintain distance between vertebral **bones**. Provides excellent dimension, strength and retention capability to enable simple fitting and installation to patient's **bone** in spinal column. Enables securing **implant** to cut lamina segments without requiring use of a separate plate.

DESCRIPTION OF DRAWINGS - The figure shows the perspective view of unilateral

implant incorporating demineralized bone flaps.

30 Allograft implant  
31A, 31B Bone flaps  
32A, 32B Implant ends  
36 Implant outer surface  
36A, 36B Fastener hole

5/25/5 (Item 5 from file: 350) [Links](#)

Fulltext available through: [Order File History](#)

Derwent WPIX \*\*\* CURRENT APPLICATION \*\*\*  
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0014233573 & Drawing available

WPI Acc no: 2004-419519/200439

Related WPI Acc No: 2002-740210; 2002-740212; 2002-740213; 2003-110482; 2004-728388; 2005-404640; 2009-A89861

**Implant providing method for producing bone implant made from partially demineralized or demineralized bone, involves demineralizing block of cancellous bone having first geometry, before block is wet and compressed to second geometry**

Patent Assignee: SYNTHES USA (SYNT-N)

Inventor: ANGELUCCI C M; BOYER M L; PAUL D C

Patent Family ( 1 patents, 1 & countries )

Patent Number	Kind	Date	Update	Type
US 20040107003	A1	20040603	200439	B

US 20040107003

Local Applications (no., kind, date): US 2001271745 P 20010228; US 2001927335 A 20010813; US 2003718804 A 20031124

Priority Applications (no., kind, date): US 2001271745 P 20010228; US 2001927335 A 20010813; US 2003718804 A 20031124

#### Alerting Abstract US A1

NOVELTY - The method involves demineralizing a **block of cancellous bone** (40) having a first geometry, before the **block is wet**. The **wet block is compressed** from a first geometry to a second geometry.

USE - For **producing bone implant** made from partially demineralized or demineralized **bone** and used to **treat bone** fractures and defects.

ADVANTAGE - Ensures reliable formation of **bone** from partially demineralized or demineralized **bone**.

DESCRIPTION OF DRAWINGS - The figure shows the isometric view of the **cortical shell**.

40 **Block of cancellous bone**

42 **Pellet**

44 **Cylinder**

46 **Cage**

48 **Perforations**

5/25/8 (Item 8 from file: 350) [Links](#)

Fulltext available through: [Order File History](#)

Derwent WPIX

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0013215758 & Drawing available

WPI Acc no: 2003-300336/200329

XPX Acc No: N2003-239074

**Implant for spinal column, has graft engaging portion which is configured to retain allograft when allograft contacts graft engaging portion**

Patent Assignee: ANGELUCCI C M (ANGE-I); BOYER M L (BOYE-I); PAUL D C (PAUL-I); RYAN C J (RYAN-I); SINHA A (SINH-I); SYNTHES USA (SYNT-N); WALTER M (WALT-I)

Inventor: ANGELUCCI C; ANGELUCCI C M; BOYER M; BOYER M L; PAUL D; PAUL D C; RYAN C; RYAN C J; SINHA A; WALTER M; WALTHER M; ANGELUCCI M; BOYER L; PAUL C; RYAN J

Patent Family ( 9 patents, 26 & countries )

Patent Number	Kind	Date	Update	Type
US 20030045936	A1	20030306	200329	B
WO 2003020141	A1	20030313	200341	E
US 6635087	B2	20031021	200370	E
EP 1420708	A1	20040526	200435	E
EP 1420708	B1	20060621	200643	E
DE 60212648	E	20060803	200654	E
EP 1698294	A1	20060906	200659	E
ES 2266543	T3	20070301	200719	E
DE 60212648	T2	20070621	200743	E

US 20030045936

Local Applications (no., kind, date): US 2001942335 A 20010829; WO 2002US27139 A 20020826; US 2001942335 A 20010829; EP 2002753537 A 20020826; WO 2002US27139 A 20020826; EP 2002753537 A 20020826; WO 2002US27139 A 20020826; DE 60212648 A 20020826; EP 2002753537 A 20020826; WO 2002US27139 A 20020826; EP 2002753537 A 20020826; EP 200611279 A 20020826; EP 2002753537 A 20020826; DE 60212648 A 20020826; EP 2002753537 A 20020826; WO 2002US27139 A 20020826

Priority Applications (no., kind, date): US 2001942335 A 20010829

#### Alerting Abstract US A1

NOVELTY - A portion made from non-allograft material has first and second **bone** engaging portions, and an allograft engaging portion. The **graft** engaging portion is configured to retain the allograft when the allograft contacts the **graft** engaging portion.

DESCRIPTION - An INDEPENDENT CLAIM is also included for a method for providing a desired distance between first and second cut **bone** ends of the spine.

USE - For spinal column.

ADVANTAGE - Can expand the spinal canal to eliminate pressure on the spinal cord caused by an impinging vertebral **bone**. Provides excellent dimensional, strength and retention capability, and enhance fusion with patient's own **bone**, easy to select, fit and install which provide excellent compatibility with post operative imaging.

DESCRIPTION OF DRAWINGS - The figure is the perspective view of an **implant** for unilateral laminoplasty procedure.

5/25/11 (Item 11 from file: 350) [Links](#)

Fulltext available through: [Order File History](#)

Derwent WPIX

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0012880926 & Drawing available

WPI Acc no: 2002-740213/200280

Related WPI Acc No: 2002-740210; 2002-740212; 2003-110482; 2004-419519; 2004-728388; 2005-404640; 2009-A89861

**Forming method for demineralized bone implant, involves demineralizing cancellous bone section, then compressing bone section into smaller geometry and drying same bone section**

Patent Assignee: ANGELUCCI C M (ANGE-I); BOYER M L (BOYE-I); PAUL D C (PAUL-I); SYNTHES (SYNT-N); SYNTHES USA (SYNT-N); SYNTHES GMBH (SYNT-N)

Inventor: ANGELUCCI C M; BOYER M L; PAUL D C; ANGELUCCI C ; BOYER M; PAUL D

Patent Family ( 8 patents, 95 & countries )

Patent Number	Kind	Date	Update	Type
US 20020120347	A1	20020829	200280	B
WO 2002069818	A2	20020912	200280	E
US 6652593	B2	20031125	200378	E
AU 2001283368	A1	20020919	200433	E
EP 1424948	A2	20040609	200438	E
AU 2001283368	A8	20051027	200624	E
EP 1424948	B1	20081210	200904	E
DE 60136971	E	20090122	200909	E

US 20020120347

Local Applications (no., kind, date): US 2001271745 P 20010228; US 2001927335 A 20010813; WO 2001US25455 A 20010814; US 2001927335 A 20010813; AU 2001283368 A 20010814; EP 2001962169 A 20010814; WO 2001US25455 A 20010814; AU 2001283368 A 20010814; EP 2001962169 A 20010814; WO 2001US25455 A 20010814; DE 60136971 A 20010814; EP 2001962169 A 20010814; WO 2001US25455 A 20010814

Priority Applications (no., kind, date): US 2001271745 P 20010228; US 2001271745 P 20010228; US 2001927335 A 20010813; US 2001927335 A 20010813; US 2001927335 A 20010813; US 2001927335 A 20010813

#### Alerting Abstract US A1

NOVELTY - The method involves demineralizing a **cancellous bone** section of a predetermined geometry. The **bone** section is obtained from e.g. femur, tibia, humerus, fibula, ulna. The demineralized **bone** section is then **compressed** to a smaller geometry and then **dried**. The **bone** section is then filled into a space, a **bony** defect or a cavity.

DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

a method of maintaining distance between vertebral bodies;  
a method of replacing nucleus of a vertebral disc;  
and an **implant**.

USE - For forming demineralized **bone implant** for filling voids, **bone** defects or other regions e.g. cavities, within spinal cages, as well as **bony** defects caused by removal of **bone** screws or diseased **bone**. Also used as e.g. **cortical** shell, burr hole cover in cranial region of skull.

ADVANTAGE - Enables demineralized **cancellous bone** to be used as **soft** substance for enhancing anatomical areas during e.g. plastic surgery, face lifts, chin augmentations, cheek enhancements, eye brow lifts, or suited for filling defect regions caused by disease, congenital conditions or surgical procedure. Minimizes degree of brittleness of **bone**. Makes **implant** suitable in **treatment** of brain problems e.g. tumors, aneurysm, blood clots, head injuries, abscesses, as well as medical procedures e.g. laminoplasty, nucleus replacements, disc or ligament replacement.

DESCRIPTION OF DRAWINGS - The figure shows the perspective view of a **cortical** shell.

5/25/12 (Item 12 from file: 350) [Links](#)

Fulltext available through: [Order File History](#)

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0012880925 & *Drawing available*

WPI Acc no: 2002-740212/200280

Related WPI Acc No: 2002-740210; 2002-740213; 2003-110482; 2004-419519; 2004-728388; 2005-404640; 2009-A89861

**Bone sheet for demineralized bone-derived implant has partially demineralized field surrounding at least one mineralized region**

Patent Assignee: ANGELUCCI C M (ANGE-I); BOYER M L (BOYE-I); PAUL D C (PAUL-I); SYNTHES USA (SYNT-N)

Inventor: ANGELUCCI C M; BOYER M L; PAUL D C

Patent Family ( 2 patents, 1 & countries )

Patent Number	Kind	Date	Update	Type
US 20020120346	A1	20020829	200280	B
US 6855169	B2	20050215	200513	E

US 20020120346

Local Applications (no., kind, date): US 2001271745 P 20010228; US 2001927333 A 20010813; US 2001927333 A 20010813

Priority Applications (no., kind, date): US 2001271745 P 20010228; US 2001927333 A 20010813; US 2001927333 A 20010813

**Alerting Abstract US A1**

NOVELTY - The **bone sheet** includes a partially demineralized field surrounding at least one mineralized region.

DESCRIPTION - An INDEPENDENT CLAIM is also included for a flexible **bone sheet manufacturing method**.

USE - For demineralized **bone-derived implant**.

ADVANTAGE - Enables partial demineralization of portions of **bone**, while other **bone** portions are remain in mineralized state. Enables solidifying demineralized **cortical** fibers to desired geometry to portions of **bone** with significant strength.

DESCRIPTION OF DRAWINGS - The figure shows the bendable demineralized **bone-derived implant**.

5/25/13 (Item 13 from file: 350) [Links](#)

Fulltext available through: [Order File History](#)

Derwent WPIX

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0012880923 & *Drawing available*

WPI Acc no: 2002-740210/200280

Related WPI Acc No: 2002-740212; 2002-740213; 2003-110482; 2004-419519; 2004-728388; 2005-404640; 2009-A89861

**Cranial void filler includes lower, partially demineralized cortical bone section which is adapted and configured to contact walls of cranial void**

Patent Assignee: ANGELUCCI C M (ANGE-I); BOYER M L (BOYE-I); PAUL D C (PAUL-I); SYNTHES USA (SYNT-N)

Inventor: ANGELUCCI C M; BOYER M L; PAUL D C

Patent Family ( 2 patents, 1 & countries )

Patent Number	Kind	Date	Update	Type
US 20020120338	A1	20020829	200280	B
US 6776800	B2	20040817	200454	E

US 20020120338

Local Applications (no., kind, date): US 2001271745 P 20010228; US 2001927334 A 20010813; US 2001927334 A 20010813

Priority Applications (no., kind, date): US 2001271745 P 20010228; US 2001927334 A 20010813; US 2001927334 A 20010813

#### Alerting Abstract US A1

NOVELTY - The cranial void filler includes a lower, partially demineralized **cortical bone** section which is adapted and configured to contact walls of a cranial void. The cranial void filler also includes an upper mineralized **cortical bone** section.

DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

a plate;  
an **implant**;  
and a method for forming an **implant**.

USE - Used for filling voids, **bone** defects, or other regions such as the cavities inside spinal cages. Used for enhancing anatomical areas. Used in the replacement of **bone** at the site of a previous excision in order to re-establish support and protection of the spinal cord.

ADVANTAGE - Enables **production** of larger **implants** since the strength of the **implants** is improved. Enables reliably filling in the cranial void since filler has partially demineralized **cortical bone** section which is **softer** than other sections of the cranial void filler.

DESCRIPTION OF DRAWINGS - The figure shows a bendable **implant**.

5/25/14 (Item 14 from file: 350) [Links](#)

Fulltext available through: [Order File History](#)

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0010959389 & Drawing available

WPI Acc no: 2001-582625/200165

Related WPI Acc No: 2001-582622; 2001-582623; 1999-469223; 2000-586816; 2002-267759

XRFX Acc No: N2001-434065

**Skeletal reconstruction cage has first end cap which is coupled to first end of central body and has second end cap which is coupled to second end of central body**

Patent Assignee: ANGELUCCI C M (ANGE-I); BOYER M L (BOYE-I); HIGGINS T B (HIGG-I); PAUL D C (PAUL-I); SYNTHES AG (SYNT-N); SYNTHES USA (SYNT-N)

Inventor: ANGELUCCI C M; BOYER M L; HIGGINS T B; PAUL D C

Patent Family ( 8 patents, 94 & countries )

Patent Number	Kind	Date	Update	Type
WO 2001070139	A2	20010927	200165	B
US 20010056302	A1	20011227	200206	E
AU 200149367	A	20011003	200210	E
EP 1265557	A2	20021218	200301	E
US 6660038	B2	20031209	200381	E
US 20040181283	A1	20040916	200461	E



AU 2001249367	A8	20051013	200611	E
US 7014659	B2	20060321	200621	E

WO 2001070139

Local Applications (no., kind, date): WO 2001US9269 A 20010322; US 2000191099 P 20000322; US 2001814215 A 20010322; AU 200149367 A 20010322; EP 2001922581 A 20010322; WO 2001US9269 A 20010322; US 2000191099 P 20000322; US 2001814215 A 20010322 ; US 2000191099 P 20000322; US 2001814215 A 20010322; US 2003730011 A 20031209; AU 2001249367 A 20010322; US 2000191099 P 20000322; US 2001814215 A 20010322; US 2003730011 A 20031209  
 Priority Applications (no., kind, date): US 2000191099 P 20000322; US 2001814215 A 20010322; US 2003730011 A 20031209

#### Alerting Abstract WO A2

NOVELTY - A first end cap is coupled to the first end of a central body. A second end cap is coupled to the second end of the central body.

USE - Used for filling vacancies in **bone tissue**.

ADVANTAGE - Permits wide range of angles, heights and configurations to be accommodated so that particular anatomical defect may be spanned.

DESCRIPTION OF DRAWINGS - The figure shows the side view and the top view of a central shaft.

7/7/2 (Item 2 from file: 5) [Links](#)

Biosis Previews(R)

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18650639 **Biosis No.:** 200510345139

#### Demineralized bone-derived implants

**Author:** Boyer, Michael L; Paul David C; Angelucci Christopher M

**Author Address:** Paoli, PA USA\*\*USA

**Journal:** Official Gazette of the United States Patent and Trademark Office  
 Patents FEB 15 2005 2005

**ISSN:** 0098-1133

**Document Type:** Patent

**Record Type:** Abstract

**Language:** English

**Abstract:** Selectively demineralized **bone-derived implants** are provided. In one embodiment, a **bone sheet** for **implantation** includes a demineralized field surrounding mineralized regions. In another embodiment, a **bone defect filler** includes a demineralized **cancellous bone** section in a first geometry. The first geometry is **compressible** and **dryable** to a second geometry smaller than the first geometry, and the second geometry is expandable and **rehydratable** to a third geometry larger than the second geometry.

7/7/3 (Item 3 from file: 5) [Links](#)

Biosis Previews(R)

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18011174 **Biosis No.:** 200400381963

#### Implants formed with demineralized bone

**Author:** Boyer Michael L (Reprint); Paul David C; Angelucci Christopher M

**Journal:** Official Gazette of the United States Patent and Trademark Office  
 Patents 1285 ( 3 ): Aug. 17, 2004 2004

**Medium:** e-file

ISSN: 0098-1133 \_(ISSN print)  
**Document Type:** Patent  
**Record Type:** Abstract  
**Language:** English

**Abstract:** Selectively partially and demineralized **bone-derived implants**, their methods of **preparation** and use are provided. In one embodiment, a cranial void filler preferably having a **T-shape** formed of an upper mineralized **cortical bone** section and at least a partially demineralized lower section adapted to fill a cranial void is disclosed. In another embodiment, a plate preferably having a **dog-bone-shape** having mineralized and at least partially demineralized sections is disclosed. In a further embodiment, a unitary cord having a first mineralized section with a plurality of slits to provide flexibility and a second at least partially demineralized section is described. Also disclosed is an **implant** for laminoplasty having at least a partially demineralized section and a mineralized section. A method of forming an **implant** of demineralized fibers also is disclosed.

7/7/4 (Item 4 from file: 5) [Links](#)  
 Biosis Previews(R)  
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 17973962 **Biosis No.:** 200400344751  
**Plugs for filling bony defects**

**Author:** Boyer Michael L (Reprint); Paul David C; Higgins Thomas B; Angelucci Christopher M; Messerli Dominique D; Kobayashi Kenneth I  
**Author Address:** West Chester, PA, USA\*\*USA  
**Journal:** Official Gazette of the United States Patent and Trademark Office  
 Patents 1284 ( 4 ): July 27, 2004 2004  
**Medium:** e-file  
**ISSN:** 0098-1133 \_(ISSN print)  
**Document Type:** Patent  
**Record Type:** Abstract  
**Language:** English

**Abstract:** The present invention relates to **plugs** for filling vacancies in **bone tissue**. The **plugs** include a body and at least one end cap that are coupled together and may be formed from **bone**. The body of the **plug** may be a sleeve, and the **plug** may further include an insert configured and dimensioned to be received in the sleeve.

7/7/5 (Item 5 from file: 5) [Links](#)  
 Biosis Previews(R)  
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 17660061 **Biosis No.:** 200400030818  
**Demineralized bone implants**

**Author:** Boyer Michael L (Reprint); Paul David C; Angelucci Christopher M  
**Author Address:** Schwenksville, PA, USA\*\*USA  
**Journal:** Official Gazette of the United States Patent and Trademark Office  
 Patents 1276 ( 4 ): Nov. 25, 2003 2003  
**Medium:** e-file  
**ISSN:** 0098-1133 \_(ISSN print)  
**Document Type:** Patent

**Record Type:** Abstract  
**Language:** English

**Abstract:** Selectively demineralized bone-derived implants are provided. In one embodiment, a bone sheet for implantation includes a demineralized field surrounding mineralized regions. In another embodiment, a bone defect filler includes a demineralized cancellous bone section in a first geometry. The first geometry is compressible and dryable to a second geometry smaller than the first geometry, and the second geometry is expandable and rehydratable to a third geometry larger than the second geometry.

10/25/1 (Item 1 from file: 350) [Links](#)  
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0015353164 & Drawing available  
 WPI Acc no: 2005-703425/200572  
 XRPX Acc No: N2005-577099

**Multi-piece implant for intervertebral fusion, includes cortical bone segments formed with male and female locking surfaces, connected by inserting locking pins into holes extending through cortical bone segments**  
 Patent Assignee: ANGELUCCI C M (ANGE-I); BOYER M L (BOYE-I); DELURIO R J (DELU-I); GOODWIN R D (GOOD-I); MESSERLI D (MESS-I); MYER J (MYER-I); RANDALL B L (RAND-I); SYNTHES (SYNT-N); SYNTHES USA (SYNT-N); SYNTHES USA LLC (SYNT-N)

Inventor: ANGELUCCI C; ANGELUCCI C M; BOYER M; BOYER M L; DELURIO R; DELURIO R J; GOODWIN R; GOODWIN R D; GOODWIN R D; MESSERLI D; MYER J; RANDALL B; RANDALL B L; ANGELUCCI C H

Patent Family ( 11 patents, 108 & countries )

Patent Number	Kind	Date	Update	Type
WO 2005097004	A2	20051020	200572	B
US 20050240267	A1	20051027	200572	E
EP 1732480	A2	20061220	200702	E
AU 2005231346	A1	20051020	200720	E
KR 2006130768	A	20061219	200742	E
BR 200509185	A	20070918	200763	E
IN 200603927	P4	20070615	200765	E
JP 2007530177	W	20071101	200780	E
CN 101027015	A	20070829	200806	E
ZA 200608184	A	20080625	200848	E
US 7491237	B2	20090217	200914	E

WO 2005097004

Local Applications (no., kind, date): WO 2005US10255 A 20050328; US 2004556860 P 20040326; US 200593111 A 20050328; EP 2005731330 A 20050328; WO 2005US10255 A 20050328; AU 2005231346 A 20050328; WO 2005US10255 A 20050328; KR 2006722282 A 20061026; BR 20059185 A 20050328; WO 2005US10255 A 20050328; WO 2005US10255 A 20050328; IN 2006CN3927 A 20061026; WO 2005US10255 A 20050328; JP 2007505258 A 20050328; CN 200580016242 A 20050328; WO 2005US10255 A 20050328; ZA 20068184 A 20050328; US 2004556860 P 20040326; US 200593111 A 20050328

Priority Applications (no., kind, date): US 2004556860 P 20040326; US 2004556860 P 20040326; US 200593111 A 20050328

**Alerting Abstract WO A2**

NOVELTY - Each **implant** (10) has **cortical bone** segments (30,40,50) formed with male and female locking surfaces. The locking pins are inserted through the holes extending through the **cortical bone** segments so as to connect the **cortical bone** segments for forming the multi-piece **implant**.

DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

multi-piece intervertebral **implant manufacturing method**; and  
intervertebral **implant kit**.

USE - For intervertebral fusion for **treatment** of back pain caused by **compression** of spinal cord nerve roots, degenerative vertebral disc diseases and trauma.

ADVANTAGE - Ensures reliable locking of the **cortical bone** segments, without separation of the **bone** segments during **implantation** within the patient.

DESCRIPTION OF DRAWINGS - The figure shows a perspective view of the intervertebral **implant**.

10 intervertebral **implant**

14 upper surface

16 lower surfaces

24 pyramid **shaped** teeth

30,40,50 **cortical bone** segments

10/25/2 (Item 2 from file: 350) [Links](#)

Fulltext available through: [Order File History](#)

Derwent WPIX

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0014848679 & *Drawing available*

WPI Acc no: 2005-196381/200520

XRFX Acc No: N2005-162131

**Intervertebral implant used for vertebrae fusion surgery, has two portions which are connected with dovetail joint and formed superior and inferior surfaces each having several teeth**

Patent Assignee: ANGELUCCI C H (ANGE-I); ANGELUCCI C M (ANGE-I); BOYER M L (BOYE-I); BOYER M L I (BOYE-I); MESSERLI D (MESS-I); MYER J (MYER-I); SYNTHES GMBH (SYNT-N) ; SYNTHES USA (SYNT-N)

Inventor: **ANGELUCCI C H; BOYER M L; MESSERLI D; MYER J; ANGELUCCI C M; BOYER M L I**

Patent Family ( 12 patents, 107 & countries )

Patent Number	Kind	Date	Update	Type
WO 2005020861	A1	20050310	200520	B
US 20050113918	A1	20050526	200535	E
EP 1670396	A1	20060621	200643	E
BR 200414078	A	20061024	200671	E
AU 2004268673	A1	20050310	200674	E
JP 2007503924	W	20070301	200718	E
US 7226482	B2	20070605	200737	NCE
CN 1901853	A	20070124	200740	E
US 20070208424	A1	20070906	200760	E
ZA 200602137	A	20070829	200772	E
IN 200601112	P4	20070817	200780	E
KR 2007097290	A	20071004	200819	E

WO 2005020861

Local Applications (no., kind, date): WO 2004US28544 A 20040902; US 2003499926 P 20030902; US 2004931788 A 20040901; EP 2004782938 A 20040902; WO 2004US28544 A 20040902; BR 200414078 A 20040902; WO 2004US28544 A 20040902; AU 2004268673 A 20040902; WO 2004US28544 A 20040902; JP 2006525432 A 20040902; US 2004931788 A 20040901; CN 200480032221 A 20040902; US 2003499926 P 20030902; US 2004931788 A 20040901; US 2007745343 A 20070507; ZA 20062137 A 20040902; WO 2004US28544 A 20040902; IN 2006CN1112 A 20060331; WO 2004US28544 A 20040902; KR 2006704363 A 20060302

Priority Applications (no., kind, date): US 2003499926 P 20030902; US 2004931788 A 20040901; US 2007745343 A 20070507

#### Alerting Abstract WO A1

NOVELTY - Two **implant** portions are connected with a dovetail joint and formed superior and inferior surfaces (14,16) each having several teeth.

DESCRIPTION - An INDEPENDENT CLAIM is included for a **manufacturing** method of an intervertebral **implant**.

USE - Used for vertebrae fusion surgery.

ADVANTAGE - Ensures optimal fit of **implant** between vertebrae and promotes fusion of vertebrae with the **implant** without excessive contouring of the surfaces of **implant**. Maximizes **bone** growth. Prevents short-term slippage of **implant** until the **implant** is fused.

DESCRIPTION OF DRAWINGS - The figure is the perspective view of an **implant**.

6 Anterior end

10 **Implant**

14,16 Superior and inferior surfaces

18 Exterior surface

10/25/6 (Item 6 from file: 350) [Links](#)

Fulltext available through: [Order File History](#)

Derwent WPIX

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0010959387 & Drawing available

WPI Acc no: 2001-582623/200165

Related WPI Acc No: 1999-469223; 2000-586816; 2001-582622; 2001-582625; 2002-267759

XRXP Acc No: N2001-434063

**Implant used for orthopedic operation, has inner sheath and outer sheaths made from different bones, such that exterior surface of outer sheath contact interior surfaces of other outer sheaths**

Patent Assignee: BOYER M L (BOYE-I); HIGGINS T B (HIGG-I); PAUL D C (PAUL-I); SYNTHES AG (SYNT-N); SYNTHES USA (SYNT-N)

Inventor: **BOYER M; BOYER M L; HIGGINS T; HIGGINS T B; PAUL D; PAUL D C; BOYER L; HIGGINS B; PAUL C**

Patent Family ( 14 patents, 94 & countries )

Patent Number	Kind	Date	Update	Type
WO 2001070137	A2	20010927	200165	B
US 20010039456	A1	20011108	200171	E
US 20010039458	A1	20011108	200171	E
US 20010041941	A1	20011115	200172	E
AU 200149369	A	20011003	200210	E
EP 1296620	A2	20030402	200325	E
US 6632247	B2	20031014	200368	E
US 20040075192	A1	20040422	200428	E
AU 2001249369	A8	20051006	200610	E

US 7087087	B2	20060808	200652	E
EP 1296620	B1	20061108	200674	E
US 20060276907	A1	20061207	200681	E
EP 1296620	B8	20061227	200702	E
DE 60124399	E	20061221	200703	E

WO 2001070137

Local Applications (no., kind, date): WO 2001US9273 A 20010322; US 2000191099 P 20000322; US 2001814114 A 20010322; US 2000191099 P 20000322; US 2001814216 A 20010322; US 2000191099 P 20000322; US 2001814224 A 20010322; AU 200149369 A 20010322; EP 2001922583 A 20010322; WO 2001US9273 A 20010322; US 2000191099 P 20000322; US 2001814216 A 20010322; US 2000191099 P 20000322; US 2001814216 A 20010322; US 2003682996 A 20031014; AU 2001249369 A 20010322; US 2000191099 P 20000322; US 2001814216 A 20010322; US 2003682996 A 20031014; EP 2001922583 A 20010322; WO 2001US9273 A 20010322; US 2000191099 P 20000322; US 2001814224 A 20010322; US 2006505648 A 20060817; EP 2001922583 A 20010322; WO 2001US9273 A 20010322; DE 60124399 A 20010322; EP 2001922583 A 20010322; WO 2001US9273 A 20010322

Priority Applications (no., kind, date): US 2000191099 P 20000322; US 2001814114 A 20010322; US 2001814216 A 20010322; US 2001814224 A 20010322; US 2003682996 A 20031014; US 2006505648 A 20060817

#### Alerting Abstract WO A2

NOVELTY - An **implant** (16) has an inner **sheath** (18) and at least one outer **sheath** (17) made from different **bones**, such that exterior surface of the outer **sheath** contact the interior surfaces of other outer **sheaths**.

DESCRIPTION - An INDEPENDENT CLAIM is also included for forming an **implant**.

USE - Used for orthopedic operation.

ADVANTAGE - Offers improved **implant** which ensures efficient utilization of **bone** sections and is formed by integrated **bone** fragments which are interlocked and formed a mechanically effective strong unit.

DESCRIPTION OF DRAWINGS - The figure shows a perspective view of the **bone** portions which are combined to form an **implant**.

16 **Implant**

17 Outer **sheath**

18 Inner **sheath**

10/25/7 (Item 7 from file: 350) [Links](#)

Fulltext available through: [Order File History](#)

Derwent WPIX

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0010273968 & Drawing available

WPI Acc no: 2000-586816/200055

Related WPI Acc No: 1999-469223; 2001-582622; 2001-582623; 2001-582625; 2002-267759

XPX Acc No: N2000-434279

**Intervertebral allograft spacer for use as an allogenic implant comprises implant with top section joined to the bottom allowing smaller sections of allogenic bone and pin passing through aligned holes**

Patent Assignee: EMCH H W (EMCH-I); MUSCULOSKELETAL TRANSPLANT FOUND (MUSC-N); PAUL D C (PAUL-I); SCHENK B (SCHE-I); SYNTHES (SYNT-N); SYNTHES AG (SYNT-N); SYNTHES CHUR AG (SYNT-N); SYNTHES USA (SYNT-N); YACCARINO J A (YACC-I)

Inventor: EMCH H; EMCH H W; PAUL D; PAUL D C; SCHENK B; YACCARINO J A; BOYER M L; HIGGINS T B

Patent Family ( 12 patents, 21 & countries )

Patent Number	Kind	Date	Update	Type
WO 2000007527	A1	20000217	200055	B
EP 1100417	A1	20010523	200130	E
US 6258125	B1	20010710	200141	E
US 20020062153	A1	20020523	200239	E
US 6554863	B2	20030429	200331	E
EP 1100417	B1	20040407	200425	E
DE 69916280	E	20040513	200434	E
ES 2217796	T3	20041101	200474	E
CA 2338881	C	20050315	200522	E
DE 69916280	T2	20050525	200537	E
US 20050261771	A1	20051124	200577	E
US 20060241763	A1	20061026	200671	E

WO 2000007527

Local Applications (no., kind, date): WO 1999EP5541 A 19990730; EP 1999940102 A 19990730; WO 1999EP5541 A 19990730; US 199895209 P 19980803; US 1999363844 A 19990730; US 199895209 P 19980803; US 1999363844 A 19990730; US 2001899086 A 20010706; US 199895209 P 19980803; US 1999363844 A 19990730; US 2001899086 A 20010706; EP 1999940102 A 19990730; WO 1999EP5541 A 19990730; DE 69916280 A 19990730; EP 1999940102 A 19990730; WO 1999EP5541 A 19990730; EP 1999940102 A 19990730; CA 2338881 A 19990730; WO 1999EP5541 A 19990730; DE 69916280 A 19990730; EP 1999940102 A 19990730; WO 1999EP5541 A 19990730; US 199873271 P 19980130; US 199895209 P 19980803; US 199895425 P 19980805; US 1998219439 A 19981223; US 1999363844 A 19990730; US 2001828625 A 20010409; US 2005150584 A 20050609; US 199895209 P 19980803; US 1999363844 A 19990730; US 2001814214 A 20010322; US 2006472211 A 20060620

Priority Applications (no., kind, date): US 199873271 P 19980130; US 199895209 P 19980803; US 199895425 P 19980805; US 1998219439 A 19981223; WO 1999EP5008 A 19990715; US 1999363844 A 19990730; US 2001814214 A 20010322; US 2001828625 A 20010409; US 2001899086 A 20010706; US 2005150584 A 20050609; US 2006472211 A 20060620

#### Alerting Abstract WO A1

NOVELTY - The intervertebral allograft spacer comprises **implant** (50) with top section (52) joined to the bottom section (54) allowing smaller sections of allogenic **bone** to be used. A top connection surface (56) and bottom connecting surface (58) define the interfaces. To facilitate insertion of the **implant**, the anterior side (26) transitions to superior and inferior surfaces (14,16) with rounded edges (30). A pin (64) passes through aligned holes (66).

USE - For use allogenic intervertebral **implant** conforming with end plates of vertebrae.

ADVANTAGE - The top and bottom surfaces if the **implant** have multiple teeth resisting expulsion and providing initial stability, while the **implant** provides an initial stability to fuse without the stress shielding.

DESCRIPTION OF DRAWINGS - Figure of a side view of the **implant**.

14,16 Superior and inferior surfaces

26 Anterior side

50 **Implant**

52 Top section

56 Top connection surface

58 Connecting surface

64 Pin

66 Aligned holes

10/25/10 (Item 10 from file: 350) [Links](#)

Fulltext available through: [Order File History](#)

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0009524954 & *Drawing available*

WPI Acc no: 1999-469223/199939

Related WPI Acc No: 2000-586816; 2001-582622; 2001-582623; 2001-582625; 2002-267759

XPX Acc No: N1999-350368

# **Allogenic intervertebral implant for fusing vertebrae**

Patent Assignee: EMCH H (EMCH-I); PAUL D C (PAUL-I); SCHENK B (SCHE-I);

SYNTHE AG (SYNT-N); SYNTHE USA (SYNT-N)

Inventor: BAKER K J; CARVER J L; EMCH H; EMCH H W; PAUL D C; SCHENK B

Patent Family ( 11 patents, 22 & countries )

Patent Number	Kind	Date	Update	Type
WO 1999038461	A2	19990805	199939	B
EP 1051134	A2	20001115	200059	E
US 6143033	A	20001107	200059	E
US 20010049560	A1	20011206	200203	E
JP 20020501782	W	20020122	200211	E
US RE38614	E	20041005	200466	E
US 20050256574	A1	20051117	200576	E
US 6986788	B2	20060117	200606	E
US 7300465	B2	20071127	200780	E
US 20080046090	A1	20080221	200816	E
US 7347873	B2	20080325	200823	E

WO 1999038461

Local Applications (no., kind, date): WO 1999EP433 A 19990122; EP 199907405 A 19990122; WO 1999EP433 A 19990122; US 199873271 P 19980130; US 199895425 P 19980805; US 1998219439 A 19981223; US 199873271 P 19980130; US 199895209 P 19980803; US 199895425 P 19980805; US 1998219439 A 19981223; US 1999363844 A 19990730; US 2001828625 A 20010409; WO 1999EP433 A 19990122; JP 2000529197 A 19990122; US 199873271 P 19980130; US 199895209 P 19980803; US 199895425 P 19980805; US 1998219439 A 19981223; US 1999363844 A 19990730; US 2002225282 A 20020822; US 199873271 P 19980130; US 199895209 P 19980803; US 199895425 P 19980805; US 1998219439 A 19981223; US 1999363844 A 19990730; US 2001828625 A 20010409; US 2005150608 A 20050610; US 199873271 P 19980130; US 199895209 P 19980803; US 199895425 P 19980805; US 1998219439 A 19981223; US 1999363844 A 19990730; US 2001828625 A 20010409; US 199873271 P 19980130; US 199895209 P 19980803; US 199895425 P 19980805; US 1998219439 A 19981223; US 1999363844 A 19990730; US 2001828625 A 20010409; US 2005150608 A 20050610; US 199873271 P 19980130; US 199895209 P 19980803; US 199895425 P 19980805; US 1998219439 A 19981223; US 1999363844 A 19990730; US 2001828625 A 20010409; US 2005150584 A 20050609

Priority Applications (no., kind, date): US 199873271 P 19980130; US 199895209 P 19980803; US 199895425 P 19980805; US 1998219439 A 19981223; US 1999363844 A 19990730; US 2001828625 A 20010409; US 2002225282 A 20020822; US 2005150584 A 20050609; US 2005150608 A 20050610; US 2007926569 A 20071029

**Alerting Abstract** WO A2



NOVELTY - The **implant** (10) comprises an annular **plug** conforming in **size** and **shape** with end plates of vertebrae. The **implant** has either an exterior surface identical to that of the harvest **bone** or an exterior surface machined to have a uniform **shape** such as an oval or a rectangle. The top and bottom surfaces (14,16) of the **implant** have teeth (12) to resist expulsion and provide initial stability. The **implant** is wedge-shaped in profile, this helps to restore disc height and the natural curvature of the spine. The surfaces may each have a channel for receiving a surgical instrument.

USE - None given.

ADVANTAGE - Effectively resists expulsion.

DESCRIPTION OF DRAWINGS - The figure shows a top view of the **implant**.

10 **implant**

12 teeth

14,16 top and bottom surfaces

12/7/29 (Item 1 from file: 5) [Links](#)

Biosis Previews(R)

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0020503251 **Biosis No.:** 200800550190

**Intervertebral allograft spacer**

**Author:** Paul David C; Anonymous; Emch Hansjuerg; Schenk Beat

**Author Address:** Phoenixville, PA USA\*\*USA

**Journal:** Official Gazette of the United States Patent and Trademark Office

Patents MAR 25 2008 2008

**ISSN:** 0098-1133

**Document Type:** Patent

**Record Type:** Abstract

**Language:** English

**Abstract:** An allogenic intervertebral **implant** for fusing vertebrae is disclosed. The **implant** is a piece of allogenic **bone** conforming in **size** and **shape** with a portion of an end plate of a vertebra. The **implant** has a wedge-shaped profile to restore disc height and the natural curvature of the spine. The top and bottom surfaces of the **implant** have a plurality of teeth to resist expulsion and provide initial stability. The **implant** according to the present invention provides initial stability need for fusion without stress shielding.

12/7/30 (Item 2 from file: 5) [Links](#)

Biosis Previews(R)

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0020218640 **Biosis No.:** 200800265579

**Intervertebral allograft spacer**

**Author:** Anonymous; Paul David C; Emch Hansjuerg; Schenk Beat

**Author Address:** Phoenixville, PA USA\*\*USA

**Journal:** Official Gazette of the United States Patent and Trademark Office

Patents NOV 27 2007 2007

**ISSN:** 0098-1133

**Document Type:** Patent

**Record Type:** Abstract

**Language:** English

**Abstract:** An allogenic intervertebral **implant** for fusing vertebrae is

disclosed. The **implant** is a piece of allogenic **bone** conforming in **size** and **shape** with a portion of an end plate of a vertebra. The **implant** has a wedge-shaped profile to restore disc height and the natural curvature of the spine. The top and bottom surfaces of the **implant** have a plurality of teeth to resist expulsion and provide initial stability. The **implant** according to the present invention provides initial stability need for fusion without stress shielding.

12/7/31 (Item 3 from file: 5) [Links](#)  
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 0019765447 **Biosis No.:** 200700425188  
**Multipiece allograft implant**

**Author:** Anonymous; Messerli Dominique; Myer Jacqueline; **Boyer Michael L; Angelucci Christopher H**  
**Author Address:** Downingtown, PA USA\*\*USA  
**Journal:** Official Gazette of the United States Patent and Trademark Office  
 Patents JUN 5 2007 2007  
**ISSN:** 0098-1133  
**Document Type:** Patent  
**Record Type:** Abstract  
**Language:** English

**Abstract:** An allogenic **implant** for use in intervertebral fusion is formed from two parts. The first part, composed of **cortical bone**, provides mechanical strength to the **implant**, allowing the proper distance between the vertebrae being **treated** to be maintained. The second part, composed of **cancellous bone**, is ductile and promotes the growth of new **bone** between the vertebrae being **treated** and the **implant**, thus fusing the vertebrae to the **implant** and to each other. The **implant** is **sized** and **shaped** to conform to the space between the vertebrae. Teeth formed on the superior and inferior surfaces of the **implant** prevent short-term slippage of the **implant**.

12/7/32 (Item 4 from file: 5) [Links](#)  
 Biosis Previews(R)  
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 19373943 **Biosis No.:** 200700033684  
**Multipiece implants formed of bone material**

**Author:** Anonymous; **Boyer Michael L; Paul David C; Higgins Thomas B**  
**Author Address:** Paoli, PA 19301 USA\*\*USA  
**Journal:** Official Gazette of the United States Patent and Trademark Office  
 Patents OCT 3 2006 2006  
**ISSN:** 0098-1133  
**Document Type:** Patent  
**Record Type:** Abstract  
**Language:** English

**Abstract:** The present invention relates to an **implant** comprising two or more **bone** fragments that are combined to form a single unit. **Cancellous bone** or **cortical bone** is removed from a source and fashioned into **bone** components with desirable **shapes** and **sizes**. The **bone** components may be integrated to form **implants** for **implantation** in the body. **Bone** stock may be formed by combining sections of various **bones** of the body, and the **bone** stock may be

further fashioned for use as **implants** with particular geometries.

12/7/33 (Item 5 from file: 5) [Links](#)  
 Biosis Previews(R)  
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 19345843 **Biosis No.:** 200700005584  
**Implants formed of coupled bone**

**Author:** Anonymous; **Boyer Michael L;** Paul David C; Higgins Thomas B  
**Author Address:** Paoli, PA 19301 USA\*\*USA  
**Journal:** Official Gazette of the United States Patent and Trademark Office  
 Patents AUG 8 2006 2006  
**ISSN:** 0098-1133  
**Document Type:** Patent  
**Record Type:** Abstract  
**Language:** English

**Abstract:** The present invention relates to an **implant** comprising two or more **bone** fragments that are combined to form a single unit. **Cancellous bone** or **cortical bone** is removed from a source and fashioned into **bone** components with desirable **shapes** and **sizes**. The **bone** components may be integrated to form **implants for implantation** in the body. **Bone** stock may be formed by combining sections of various **bones** of the body, and the **bone** stock may be further fashioned for use as **implants** with particular geometries.

12/7/34 (Item 6 from file: 5) [Links](#)  
 Biosis Previews(R)  
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 19345838 **Biosis No.:** 200700005579  
**Bone implants with central chambers**

**Author:** Anonymous; **Paul David C;** Emch Hansjuerg W; Schenk Beat; **Boyer Michael L;** Higgins Thomas B  
**Author Address:** Phoenixville, PA USA\*\*USA  
**Journal:** Official Gazette of the United States Patent and Trademark Office  
 Patents AUG 8 2006 2006  
**ISSN:** 0098-1133  
**Document Type:** Patent  
**Record Type:** Abstract  
**Language:** English

**Abstract:** A **bone fusion implant** for repair or replacement of **bone** includes a hollow body formed from at least two **bone** fragments which are configured and dimensioned for mutual engagement and which are coupled together. The hollow body may be formed of **autograft**, **allograft**, or **xenograft bone tissue**, and may include a core formed of at least one of **bone** material and **bone** inducing substances, with the core being disposed in the hollow body.

12/7/35 (Item 7 from file: 5) [Links](#)  
 Biosis Previews(R)  
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 18923315 **Biosis No.:** 200600268710  
**End member for a bone fusion implant**

**Author:** Messerli Dominique D; Paul David C  
**Author Address:** W Chester, PA USA\*\*USA  
**Journal:** Official Gazette of the United States Patent and Trademark Office  
 Patents AUG 16 2005 2005  
**ISSN:** 0098-1133  
**Document Type:** Patent  
**Record Type:** Abstract  
**Language:** English

**Abstract:** An end member for use with a **bone fusion implant** is disclosed. The end member has a first portion, a second portion, and a shoulder connecting the two portions. The second portion is **sized** to fit within the interior of the **bone fusion implant** in such a fashion that the shoulder rests on the edge of the **implant**. The top surface of the first portion has at least one slot to receive a surgical instrument such as an inserter and/or distractor to facilitate **implantation** of the end member and **bone fusion implant**. The top surface may also have teeth to provide initial mechanical stability between the **bone** and end plate and promote **bone fusion**.

12/7/38 (Item 10 from file: 5) **Links**  
 Biosis Previews(R)  
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 17555112 **Biosis No.:** 200300523831  
**Implants formed of coupled bone**

**Author:** Boyer Michael L (Reprint); Paul David C; Higgins Thomas B  
**Author Address:** Paoli, PA, USA\*\*USA  
**Journal:** Official Gazette of the United States Patent and Trademark Office  
 Patents 1275 ( 2 ): Oct. 14, 2003 2003  
**Medium:** e-file  
**ISSN:** 0098-1133 \_(ISSN print)  
**Document Type:** Patent  
**Record Type:** Abstract  
**Language:** English

**Abstract:** The present invention relates to an **implant** comprising two or more **bone** fragments that are combined to form a single unit. **Cancellous bone** or **cortical bone** is removed from a source and fashioned into **bone** components with desirable **shapes** and **sizes**. The **bone** components may be integrated to form **implants** for **implantation** in the body. **Bone** stock may be formed by combining sections of various **bones** of the body, and the **bone** stock may be further fashioned for use as **implants** with particular geometries.

## NPL Database Search - #1

### Search Strategy

Set	Items	Description
S1	281742	S (BONE OR BONES OR BONY OR BONEY OR OSSEOUS? OR OSTEO? OR OSTEO? OR (HARD OR SKELETAL?) (3N) TISSUE? ? OR CANCELLOUS? OR CORTICAL? ? OR CORTICOCANCELLOUS? OR TRABECULAR? ?) (5N) (BLOCK? ? OR PLUG OR PLUGS OR PLUGGING OR PLUGGED OR MASS OR SHEET? ? OR IMPLANT? OR GRAFT? OR ALLOGRAFT? OR HOMOGRAFT? OR AUTOGRAFT? OR XENOGRAPH? OR (HOMOLOGOUS? OR ALLOGENEIC? OR AUTOGEN? OR XENOGEN? OR HOMOGEN?) (3N) TRANSPLANT?)
S2	2355	S WET OR WETS OR WETTING OR WETTED OR WASH??? OR DAMP OR DAMPEN? OR (HCL OR HYDROCHLORIC? OR ACID??) (2N)TREAT?
S3	1846	S SUBMERS? OR IMMERS? OR HYDRAT?
S4	3373	S SOFTEN? OR SPONGE? OR SPONGI?
S5	12877	S COMPRESS? OR PACK? ? OR PACKED OR PACKING OR COMPACT? OR TAMP?? OR TAMPING
S6	9966	S MOLD??? OR SHAPE? ? OR SHAPING OR RESHAP??? OR (DECREASE? OR REDUC?) (2N) (SIZE? ? OR SIZING)
S7	7891	S HARDEN? OR INDURAT? OR DRY? ? OR DRYING OR DRIED OR DRIES OR HEAT??? OR FREEZEDRY? OR FREEZEDRIE? OR DEHYDRAT?
S8	135	S S2:S4(S)S5(S)S6:S7
S9	212068	S S1/TI,AB
S10	97	S S8 AND S9
S11	42	RD (unique items)
S12	38	S S8 NOT S10
S13	33	RD (unique items)
S14	12996	S S1 (10N) (MANUFACTUR? OR PREPAR? OR PROCESS??? OR PRODUCTION? OR PRODUCE? ? OR PRODUCING)
S15	1294	S S14/TI
S16	7411	S S1 (10N) (MANUFACTUR? OR PREPARATION? OR PREPARING OR PREPARE? ? OR PRODUCTION? OR PRODUCE? ? OR PRODUCING)
S17	714	S S16/TI
S18	108	S S17 AND S2:S7
S19	108	S S18 NOT (S8 OR S12)
S20	54	RD (unique items)
S21	599	S S2:S4(S)S5
S22	1059	S S2:S4(S)S6:S7
S23	1332	S S5(S)S6:S7
S24	234	S S14(S)S21:S23
S25	209	S S24 NOT (S8 OR S12 OR S19)

[File 155] **MEDLINE (R)** 1950-2009/Mar 16

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[File 5] **Biosis Previews (R)** 1926-2009/Mar W3

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[File 23] **CSA TECHNOLOGY RESEARCH DATABASE** 1963-2009/MAR

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[File 24] **CSA Life Sciences Abstracts** 1966-2009/May  
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 [File 144] **Pascal** 1973-2009/Mar W2  
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 [File 65] **Inside Conferences** 1993-2009/Mar 18  
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 [File 148] **Gale Group Trade & Industry DB** 1976-2009/Mar 05  
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 [File 149] **TGG Health&Wellness DB(SM)** 1976-2009/Feb W2  
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 [File 441] **ESPICOM Pharm&Med DEVICE NEWS** 2009/Jan W2  
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## Search Results

11/7/19 (Item 1 from file: 5) [Links](#)

Biosis Previews(R)

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17855128 **Biosis No.:** 200400225183

**Spinal intervertebral implant and method of making**

**Author:** Shimp Lawrence A (Reprint); Annunziato Steven; Martz Erik; Kaes David R

**Author Address:** Monmouth Beach, NJ, USA\*\*USA

**Journal:** Official Gazette of the United States Patent and Trademark Office  
 Patents 1280 ( 3 ): Mar. 16, 2004 2004

**Medium:** e-file

**ISSN:** 0098-1133 \_(ISSN print)

**Document Type:** Patent

**Record Type:** Abstract

**Language:** English

**Abstract:** A C-shaped or ring shaped implant formed of cortical bone has its C-shaped or inner channel filled with a bone promoting material which is preferably demineralized bone fibers formed as a flexible wet sheet or may be cancellous bone, pressed bone fibers formed from demineralized cortical bone chips soaked in acid, or a flex material formed of demineralized bone growth promoting bone fibers. The discrete bone filler element may be secured by a bonding agent, pins or screws, metal, polymer or bone material. The bone filler material is preferably bonded by filling a section of a long bone medullary cavity with wet bone fibers and then drying the fibers to bond them to the outer bone. A filled bone ring may be sliced to form annular filled sections which are then divided into mirror image C-shaped halves each forming an implant. Flex material of compressed bone fibers may be formed with an opening shaped to receive a cortical bone implant element having a C-shaped channel. The flex material surrounds the cortical bone element and fills its channel. Other embodiments are disclosed.

20/7/15 (Item 15 from file: 155) [Links](#)

Fulltext available through: [STIC Full Text Retrieval Options](#)

MEDLINE(R)

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11409088 PMID: 7774435

**[Progress in the preparation of bone allografts and their clinical uses]**

Song S Q

Zhonghua wai ke za zhi Chinese journal of surgery ( CHINA ) Dec 1994 , 32

(12) p771-4 , ISSN: 0529-5815--Print Journal Code: 0153611

Publishing Model Print

**Document type:** Comparative Study; Journal Article; Review

**Languages:** CHINESE

**Main Citation Owner:** NLM

**Record type:** MEDLINE; Completed

( 32 Refs.)

**Record Date Created:** 19950707

**Record Date Completed:** 19950707

20/7/25 (Item 25 from file: 155) [Links](#)

Fulltext available through: [STIC Full Text Retrieval Options](#)

MEDLINE(R)

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03205226 PMID: 5341653

**[Enhancement of the accretion of the Kiel compact bone graft preparation]**

A kieli kemenycsontkeszitmeny beepulesi keszsegenek fokozasa.

Kondrai G; Tarsoly E

Orvosi hetilap ( HUNGARY ) Sep 11 1966 , 107 (37) p1747-9 , ISSN: 0030-

6002--Print Journal Code: 0376412

Publishing Model Print

**Document type:** In Vitro; Journal Article

**Languages:** HUNGARIAN

**Main Citation Owner:** NLM

**Record type:** MEDLINE; Completed

**Record Date Created:** 19671028

**Record Date Completed:** 19671028

20/7/36 (Item 7 from file: 5) [Links](#)

Biosis Previews(R)

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16919411 Biosis No.: 200200512922

**Process for producing flexible sheets from demineralized, elongate, bone particles**

**Author:** Dowd Michael (Reprint); Scarborough Nelson L; Daugherty Mark;

McMickle Jack

**Author Address:** Eastampton, NJ, USA\*\*USA

**Journal:** Official Gazette of the United States Patent and Trademark Office

Patents 1261 ( 3 ): Aug. 20, 2002 2002

**Medium:** e-file

**ISSN:** 0098-1133

**Document Type:** Patent

**Record Type:** Abstract

**Language:** English

**Abstract:** A **process** for fabricating **shaped** material from demineralized **bone** particles includes the steps of applying a **liquid** slurry of demineralized **bone** particles to a support, removing excess **liquid** form the demineralized **bone** particles to provide a cohering **shaped mass** of demineralized **bone** particles, and warming the **shaped mass** of demineralized **bone** particles at a predetermined temperature and for a predetermined time period. The resultant **bone mass** exhibits enhanced tensile strength and minimal **bone** particle disassociation upon **rehydration** thereby improving **product** handling and application at the operative site.

20/7/47 (Item 8 from file: 23) [Links](#)

CSA TECHNOLOGY RESEARCH DATABASE

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0003242129 IP Accession No: CA6705671

**Method of producing implantable bone replacement materials**

**Publication Date:** 1987

, US US

**Document Type:** Patent

**Record Type:** Citation

**Language:** English

**Notes:** Patent date: 27 Oct 1987; Patent date: 27 Oct 1987

**File Segment:** Ceramics Abstracts/World Ceramic Abstracts

?



## NPL Database Search - #2

### Search Strategy

Set	Items	Description
S1	281742	S (BONE OR BONES OR BONY OR BONEY OR OSSEOUS? OR OSTEAL? OR OSTEO? OR (HARD OR SKELETAL?)) (3N) TISSUE? ? OR CANCELLOUS? OR CORTICAL? ? OR CORTICOCANCELLOUS? OR TRABECULAR? ?) (5N) (BLOCK? ? OR PLUG OR PLUGS OR PLUGGING OR PLUGGED OR MASS OR SHEET? ? OR IMPLANT? OR GRAFT? OR ALLOGRAFT? OR HOMOGRAFT? OR AUTOGRAFT? OR XENOGRAPH? OR (HOMOLOGOUS? OR ALLOGENEIC? OR AUTOGEN? OR XENOGEN? OR HOMOGEN?)) (3N) TRANSPLANT?)
S2	2355	S WET OR WETS OR WETTING OR WETTED OR WASH??? OR DAMP OR DAMPEN? OR (HCL OR HYDROCHLORIC? OR ACID??) (2N)TREAT?
S3	1846	S SUBMERS? OR IMMERS? OR HYDRAT?
S4	3373	S SOFTEN? OR SPONGE? OR SPONGI?
S5	12877	S COMPRESS? OR PACK? ? OR PACKED OR PACKING OR COMPACT? OR TAMP?? OR TAMPING
S6	9966	S MOLD??? OR SHAPE? ? OR SHAPING OR RESHAP??? OR (DECREAS? OR REDUC?) (2N) (SIZE? ? OR SIZING)
S7	7891	S HARDEN? OR INDURAT? OR DRY? ? OR DRYING OR DRIED OR DRIES OR HEAT??? OR FREEZEDRY? OR FREEZEDRIE? OR DEHYDRAT?
S8	7411	S S1 (10N) (MANUFACTUR? OR PREPARATION? OR PREPARING OR PREPARE? ? OR PRODUCTION? OR PRODUCE? ? OR PRODUCING)
S9	599	S S2:S4(S)S5
S10	1059	S S2:S4(S)S6:S7
S11	1332	S S5(S)S6:S7
S12	152	S S8(S)S9:S11
S13	70	RD (unique items)
S14	5765	S S1(10N) PROCESS?
S15	95	S S14(S)S9:S11
S16	82	S S15 NOT S12
S17	39	RD (unique items)

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[File 35] **Dissertation Abs Online** 1861-2009/Feb  
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[File 441] **ESPICOM Pharm&Med DEVICE NEWS** 2009/Jan W2  
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### Search Results

No relevant results.

## Foreign & International Patent Search

### Search Strategy

Set	Items	Description
S1	14228	S (BONE OR BONES OR BONY OR BONEY OR OSSEOUS? OR OSTEAL? OR OSTEO? OR (HARD OR SKELETAL?)) (3N) TISSUE? ? OR CANCELLOUS? OR CORTICAL? ? OR CORTICOCANCELLOUS? OR TRABECULAR? ?) (5N) (BLOCK? ? OR PLUG OR PLUGS OR PLUGGING OR PLUGGED OR MASS OR SHEET? ? OR IMPLANT? OR GRAFT? OR ALLOGRAFT? OR HOMOGRAFT? OR AUTOGRAFT? OR XENOGRAPH? OR (HOMOLOGOUS? OR ALLOGENEIC? OR AUTOGEN? OR XENOGEN? OR HOMOGEN?)) (3N) TRANSPLANT?)
S2	1139	S WET OR WETS OR WETTING OR WETTED OR WASH??? OR DAMP OR DAMPEN? OR (HCL OR HYDROCHLORIC? OR ACID??) (2N)TREAT?
S3	848	S SUBMERS? OR IMMERS? OR HYDRAT?
S4	426	S SOFTEN? OR SPONGE? OR SPONGI?
S5	1735	S COMPRESS? OR PACK? ? OR PACKED OR PACKING OR COMPACT? OR TAMP?? OR TAMPING
S6	3984	S MOLD??? OR SHAPE? ? OR SHAPING OR RESHAP??? OR (DECREASE? OR REDUC?) (2N) (SIZE? ? OR SIZING)
S7	2536	S HARDEN? OR INDURAT? OR DRY? ? OR DRYING OR DRIED OR DRIES OR HEAT??? OR FREEZEDRY? OR FREEZEDRIE? OR DEHYDRAT?
S8	159	S S2:S4(S)S5(S)S6:S7
S9	245	S S2:S4(S)S5
S10	1090	S S2:S4(S)S6:S7
S11	714	S S5(S)S6:S7
S12	4450	S S1/TI,DE
S13	63	S S8 AND S12
S14	375	S S2:S4(5N)(BLOCK? ? OR PLUG OR PLUGS OR PLUGGING OR PLUGGED OR MASS OR SHEET? ? OR IMPLANT? OR GRAFT? OR ALLOGRAFT? OR HOMOGRAFT? OR AUTOGRAFT? OR XENOGRAPH? OR (HOMOLOGOUS? OR ALLOGENEIC? OR AUTOGEN? OR XENOGEN? OR HOMOGEN?)) (3N) TRANSPLANT?)
S15	502	S S5(5N)(BLOCK? ? OR PLUG OR PLUGS OR PLUGGING OR PLUGGED OR MASS OR SHEET? ? OR IMPLANT? OR GRAFT? OR ALLOGRAFT? OR HOMOGRAFT? OR AUTOGRAFT? OR XENOGRAPH? OR (HOMOLOGOUS? OR ALLOGENEIC? OR AUTOGEN? OR XENOGEN? OR HOMOGEN?)) (3N) TRANSPLANT?)
S16	1710	S S6:S7 (5N)(BLOCK? ? OR PLUG OR PLUGS OR PLUGGING OR PLUGGED OR MASS OR SHEET? ? OR IMPLANT? OR GRAFT? OR ALLOGRAFT? OR HOMOGRAFT? OR AUTOGRAFT? OR XENOGRAPH? OR (HOMOLOGOUS? OR ALLOGENEIC? OR AUTOGEN? OR XENOGEN? OR HOMOGEN?)) (3N) TRANSPLANT?)
S17	25	S S14 AND S15 AND S16
S18	15	S S17 NOT S13
S19	42	S S14 AND S15
S20	156	S S14 AND S16
S21	146	S S15 AND S16
S22	125	S S20:S21 AND S12
S23	113	S (S19 OR S22) NOT (S13 OR S18)
S24	159	S S9 AND S10 AND S11
S25	87	S S24 NOT (S13 OR S18 OR S22)

[File 350] Derwent WPIX 1963-2008/UD=200915

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[File 347] JAPIO Dec 1976-2008/Oct(Updated 090220)

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## Search Results

13/25,K/4 (Item 4 from file: 350) [Links](#)  
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 Derwent WPIX  
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0018278039

WPI Acc no: 2008-L98374/200870

Related WPI Acc No: 2000-558372; 2003-429392; 2008-A95080

XRAM Acc no: C2008-362920

XRPX Acc No: N2008-881895

**Load-bearing osteoimplant useful for repair of bone defects comprises a shaped, coherent mass of bone particles comprising combination of nondemineralized and demineralized bone and having specific bulk density and wet compressive strength**

Patent Assignee: BOYCE T M (BOYC-I); MANRIQUE A (MANR-I); SHIMP L A (SHIM-I); WINTERBOTTOM J W (WINT-I)

Inventor: BOYCE T M; MANRIQUE A; SHIMP L A; WINTERBOTTOM J W

Patent Family ( 1 patents, 1 & countries )

Patent Number	Kind	Date	Update	Type
US 20080188945	A1	20080807	200870	B

US 20080188945

Local Applications (no., kind, date): US 1999256447 A 19990223; US 2001911562 A 20010724; US 2002229767 A 20020827; US 2003736799 A 20031216

Priority Applications (no., kind, date): US 1999256447 A 19990223; US 2001911562 A 20010724; US 2002229767 A 20020827; US 2003736799 A 20031216

### Alerting Abstract US A1

NOVELTY - A load-bearing **osteoimplant** (P1) comprises a **shaped, coherent mass of bone particles** possessing a bulk density of greater than 0.7 g/cm<sup>3</sup> and a **wet compressive** strength of at least 3 MPa; where the **bone particles** comprise a combination of nondemineralized and demineralized **bone**.

DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

**producing** (M1) the load-bearing **osteoimplant** involving: (a) providing an aggregate containing **bone particles**, and optional components selected from binder, filler, plasticizer, **wetting agent**, surface active agent, biostatic/biocidal agent, bioactive substance, reinforcing material and/or reinforcing structure; and, (b) **shaping** the aggregate into a coherent **mass** in at least one **shaping** operation to provide a **shaped** composite having an initial configuration for subsequent **shaping** into a desired **osteoimplant** or a final configuration corresponding to that of the **osteoimplant**; and an integral **implant** insertion instrument and **implant** comprising an **implant** insertion instrument portion integrally attached to an **implant** portion by a weakened, break-away connection such that on insertion of the **implant** portion at the **implantation** site, the **implant** insertion instrument portion is separated from the **implant** portion by a breaking-away force applied to it, where the **implant** portion is the load-bearing **osteoimplant** (P1) comprising a **shaped, coherent mass of bone particles**.

ACTIVITY - **Osteopathic**. No biological data given.

MECHANISM OF ACTION - None given.

USE - As load-bearing **osteoimplants** (claimed), useful for incorporation or **implantation** into body for repair of **bone defects and injuries**.

ADVANTAGE - The **osteoint** can assume any desired **shape**; can provide structural support to the site; and promotes new host **bone tissue** formation. The **osteoint** possesses a **wet compressive** strength of 12-200 (preferably 15-130, especially 20-200 or 31-200, particularly 56-200) MPa.

**Load-bearing osteoint useful for repair of bone defects** comprises a **shaped, coherent mass of bone particles comprising combination of nondemineralized and demineralized bone and having specific bulk density and wet compressive strength** Alerting Abstract ... NOVELTY - A load-bearing **osteoint** (P1) comprises a **shaped, coherent mass of bone particles** possessing a bulk density of greater than 0.7 g/cm<sup>3</sup> and a **wet compressive** strength of at least 3 MPa; where the **bone particles** comprise a combination of nondemineralized and demineralized **bone.... producing** (M1) the load-bearing **osteoint** involving: (a) providing an aggregate containing **bone particles**, and optional components selected from binder, filler, plasticizer, **wetting agent**, surface active agent, biostatic/biocidal agent, bioactive substance, reinforcing material and/or reinforcing structure; and, (b) **shaping** the aggregate into a coherent **mass** in at least one **shaping** operation to provide a **shaped** composite having an initial configuration for subsequent **shaping** into a desired **osteoint** or a final configuration corresponding to that of the **osteoint**; and an integral **implant** insertion instrument and **implant** comprising an **implant....** separated from the **implant** portion by a breaking-away force applied to it, where the **implant** portion is the load-bearing **osteoint** (P1) comprising a **shaped, coherent mass of bone particles....** ADVANTAGE - The **osteoint** can assume any desired **shape**; can provide structural support to the site; and promotes new host **bone tissue** formation. The **osteoint** possesses a **wet compressive** strength of 12-200 (preferably 15-130, especially 20-200 or 31-200, particularly 56-200) MPa. Technology Focus PHARMACEUTICALS - Preferred Method: The **shaping** step (b) of the method (M1) further involves initial **shaping** of the aggregate into an **osteoint** blank and a subsequent **shaping** of the **osteoint** blank into a fully **shaped osteoint**. The **shaping** of the aggregate is accomplished by **compressing** the aggregate within a **mold**, optionally at elevated temperature. The aggregate is **shaped** at least in part by **molding**, casting, computer aided design/computer aided manufacturing (CAD/CAM) operation, by rolling, by vacuum-forming, by sintering, by melt-forming, by thermoforming, by foam **molding**, by forging, or by laser fusion of polymer binder in it. The **molding** is by injection **molding**, blow **molding**, rotational **molding**, leach **molding**, or leavening **molding**. The casting is by solvent casting or gel casting. Subsequent **shaping** of the blank into the fully **shaped osteoint** includes a machining operation. The **shaping** by CAD/CAM operation further involves: (a1) imaging a patient's **implantation** site to provide digital information for a three dimensional model of an **osteoint....** computer; and (c1) machining a blank which is a coherent **mass** of an aggregate containing **bone particles** and, optional components selected from binder, filler, plasticizer, **wetting agent**, surface active agent, biostatic/biocidal agent, bioactive substance, reinforcing material and reinforcing structure to provide the **osteoint**, the machining is carried out by a machine executing a defined tool path numerically controlled by the computer in which the CAD file is stored. The **shaping** by CAD/CAM operation further involves: (a2) imaging a patient's **implantation** site to provide digital information for a three dimensional model of an **osteoint....** at the site; (b2) converting the three dimensional model of the **osteoint** into a CAD file stored in memory of a computer; (c2) forming a **mold** whose **shaping** surface conforms to the **osteoint** using the CAD file; and (d2) forming the **osteoint** in the **mold**. The imaging step is carried out by computerized axial tomography (CAT)

scan, magnetic resonance imaging (MRI), or medical ultrasound imaging (MUI). The binder present in... **Extension Abstract** ...using HCl solution (0.6 N, 14 ml). The **acid** was allowed to react to exhaustion (pH 7). The partially demineralized elongate **bone** particles were **washed** in **water**, and placed into a 13 mm **cylindrical press-mold**. The filled **mold** was placed in a **heated water** bath and **heated** continuously to 70(deg) C during the pressing **process**. The **bone** particles were pressed at 120000 psi for 3 days. The **pellet** produced was placed in a -70(deg) C **freezer** for 1 hour, then **freeze-dried** for 24 hours to obtain an **osteoimplant**. The resulting **osteoimplant** had a bulk density of 1.9 g/cm3 . The **osteoimplant** was **rehydrated** overnight in physiological saline and then tested for **wet compressive** strength. The **osteoimplant** had **wet compressive** strength of 56.4 MPa. **Title Terms** .../Index Terms/Additional Words: **SHAPE**; ... **WET**; **COMPRESS**; **Class Codes**

13/25,K/15 (Item 15 from file: 350) **Links**

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Derwent WPIX

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0015606931

WPI Acc no: 2006-171103/200618

Related WPI Acc No: 2002-268901; 2003-554818

XRAM Acc no: C2006-057396

XRFX Acc No: N2006-147586

**Osteoimplant, useful for repairing and/or treating bone defect, comprises a coherent aggregate of elongate bone particles, where the implant possess predetermined dimensions and shape**

Patent Assignee: BODEN S D (BODE-I); EDWARDS J T (EDWA-I); MANRIQUE A (MANR-I); RUSSELL J L (RUSS-I); SCARBOROUGH N L (SCAR-I); SHIMP L A (SHIM-I); TRAIANEDES K (TRA-I)

Inventor: BODEN S D; EDWARDS J T; MANRIQUE A; RUSSELL J L; SCARBOROUGH N L; SHIMP L A ; TRAIANEDES K

Patent Family ( 1 patents, 1 & countries )

Patent Number	Kind	Date	Update	Type
US 20060030948	A1	20060209	200618	B

US 20060030948

Local Applications (no., kind, date): US 2000219198 P 20000719; US 2001288212 P 20010502; WO 2001US22853 A 20010719; US 2002137862 A 20020502; US 2005231954 A 20050921

Priority Applications (no., kind, date): US 2000219198 P 20000719; US 2001288212 P 20010502; WO 2001US22853 A 20010719; US 2002137862 A 20020502; US 2005231954 A 20050921

#### **Alerting Abstract US A1**

**NOVELTY - Osteoimplant (I)** comprises a coherent aggregate of elongate **bone** particles, where (I) possess predetermined dimensions and **shape**.

**DESCRIPTION - INDEPENDENT CLAIMS** are also included for:

an **implant (II)** for **bone** repair possessing at least one cavity containing (I);

a method of making an **osteoimplant** comprising providing a quantity of elongate **bone** particles; mixing the elongate **bone** particles with an aqueous **wetting** agent to provide a **fluid** composition containing 5-40 volume percent swollen, **hydrated** elongate **bone** particles; **introducing** the **fluid** composition into a **mold**; and removing aqueous **wetting** agent to provide a coherent

aggregate of elongate **bone** particles possessing the dimensions and **shape** of the **osteointerface**;

a method of making a **plug** for insertion in a cavity of an **implant** or **bone** defect site, comprising: providing a coherent aggregate of elongate **bone** particles; lyophilizing the coherent aggregate of elongate **bone** particles or subjecting the coherent aggregate of elongate **bone** particles to a **compressive** force; and forming the (**compressed**) coherent aggregate of elongate **bone** particles into the **plug** before or after carrying out the lyophilizing step; or providing a coherent aggregate of elongate **bone** particles at least some of which possess surface-exposed collagen; crosslinking elongate **bone** particles in the coherent aggregate through their mutually-contacting surface exposed collagen; and **shaping** the cross linked coherent aggregate of elongate **bone** particles into the **plug** before or after carrying out crosslinking step;

a method of **treating** a **bone** defect in which the **bone** defect site possesses at least one cavity, comprising: providing a coherent aggregate of elongate **bone** particles; subjecting the coherent aggregate of elongate **bone** particles to a **compressive** force; and forming the **compressed** coherent aggregate of elongate **bone** particles into the **plug** before or after carrying out the subjecting step; or inserting a **plug** in the cavity, the **plug** comprising a coherent aggregate of elongate **bone** particles sized and shaped to substantially fill the cavity;

a method of fusing adjacent vertebrae comprising providing a space between adjacent vertebrae to be fused; and **implanting** (I) in the space; and

a method of repairing and/or **treating bone** comprising **implanting** (I) at a **bone** repair site.

#### ACTIVITY - Osteopathic.

MECHANISM OF ACTION - None given.

USE - (I) is useful for repairing and/or **treating bone** defect, where the repaired **bone** is ethmoid, frontal, nasal, occipital, parietal, temporal, mandible, maxilla, zygomatic, cervical vertebra, thoracic vertebra, lumbar vertebra, scapula, rib, sternum, clavicle, scapula, humerus, radius, ulna, carpal **bones**, metacarpal **bones** phalanges, ilium, ischium, pubis, femur, tibia, fibula, patella, calcaneus, tarsal or metatarsal **bones** (claimed). (I) (can be fashioned as a **plug** for insertion in a space or cavity within an **implant**) is useful in an orthopedic procedure e.g. intervertebral spacer employed in spinal fusion or for insertion in a cavity associated with a relatively well-defined **bone** defect e.g. an extraction socket and a bone hole. The **osteoinductive** potential of (I) for posterolateral fusion was tested using rats. The results showed that (I) provided excellent **osteoinductivity** with a cohesive three-dimension, lower density and porous matrix.

ADVANTAGE - (I) possess predetermined dimensions and **shape** (claimed). (I) is highly absorbent and **sponge-like** in nature. (I) can be **readily** applied to virtually any **bone** repair site in the body and can be utilized alone or in combination with one or more adjunct medical devices and/or procedures. (I) has unique ability to absorb body **fluids** and still retain its original **shape**. (I) has excellent **osteoinductivity**.

**Technology Focus ...acids.** The elongate **bone** particles are in the lyophilized state; and are cross-linked. The aggregate of elongate **bone** particles has been subjected to a **compressive** force of up to about 100000 psi. The **compressed** aggregate of elongate **bone** particles is in the lyophilized state. (I) is swellable upon contact with body and/or irrigation **fluids**. (I) possessing an open pore structure and a bulk density of not greater than about 0.3 g/cm<sup>3</sup>. The elongate **bone** particles are demineralized. (I) is in the

shape of a **sheet**, plate, disk, cone, pin, screw, tube, tooth, tooth root, **plug**, bone or portion of **bone**, wedge or portion of wedge, **cylinder** or threaded **cylinder**. (I... .. Preferred Method: In the method of making an **osteointerplant**, prior to removing aqueous **wetting** agent, the **elongate bone** particles are **heated**; at least **some** of the **elongate bone** particles are superficially demineralized, such **elongate bone** particles being bonded to each other through cross-links formed in their mutually-contacting... .. is an intervertebral **implant** or fusion cage. The method of repairing and/or **treating bone** comprises the **implantation** of the **osteointerplant** of (I) dimensioned and **shaped** as an **intervertebral implant** Extension Abstract

13/25,K/22 (Item 22 from file: 350) [Links](#)

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0014814269

WPI Acc no: 2005-161958/200517

Related WPI Acc No: 2002-635509

XRAM Acc no: C2005-052365

**Preparing osteogenic composition used in device for treating osteoporosis comprises combining purified collagen, osteoinductive substance and water containing dilute acid and forcing the combination to form a dispersion**

Patent Assignee: ZIMMER ORTHOBIOLOGICS INC (ZIMM-N)

Inventor: DAMIEN C J

Patent Family ( 1 patents, 1 & countries )

Patent Number	Kind	Date	Update	Type
US 20050037978	A1	20050217	200517	B

US 20050037978

Local Applications (no., kind, date): US 2000747038 A 20001222; US 2004915995 A 20040811

Priority Applications (no., kind, date): US 2000747038 A 20001222; US 2004915995 A 20040811

#### Alerting Abstract US A1

NOVELTY - **Preparing osteogenic composition comprising combining purified collagen, osteoinductive substance and water containing dilute acid** in a dispersing assembly comprising two vessels connected by a **reduced diameter** portion to establish **fluid** communication between the vessels; and forcing the combination from vessel to vessel to form a dispersion, is new.

DESCRIPTION - **Preparation of an osteogenic composition (C1) comprises combining purified collagen, osteoinductive substance, and water containing dilute acid** in a dispersing assembly comprising two vessels connected by a **reduced diameter** portion to establish **fluid** communication between the vessels; forcing the combination from vessel to vessel through the **reduced diameter** portion a predetermined number of times to disperse the collagen and **osteoinductive substance** in the **water**, such that the collagen is at least partially **hydrated** and a thickened dispersion is obtained; and allowing the dispersion to stand for a predetermined time interval.

An INDEPENDENT CLAIM is also included for making an **implantable osteogenic device** involving **dehydrating** the extrudate of (C1) to yield a **dehydrated osteogenic product**; rehydrating the **product**; and mixing a bulking material with the **rehydrated product** to provide a **shapeable osteogenic implant** material or inserting the **rehydrated product** into a spinal cage to provide an **osteogenic device**.



ACTIVITY - **Osteopathic**; Cytostatic. No biological data given.

MECHANISM OF ACTION - None given.

USE - The composition is used for **preparing** device useful for inducing **osteogenesis** at a site (e.g. dental or periodontal defect site) and in the disk space between two vertebral bodies (claimed); inducing **bone** formation of hip replacement operations and knee replacement operations; **treating osteoporosis**; and repairing **bone** tumor defects, cranialmaxillafacial defects and **bone** fractures.

ADVANTAGE - The collagen-based **osteogenic** materials has improved **shaping** and handling properties; and easy for the health care practitioner to use than conventional **implantable osteogenic** materials. The **shaped implantable** compositions or device provides a good matrix for the release of **osteogenic** substances and other desirable biologically active agents at the site of **implantation** to promote **bone** growth. The composition is **compressed** and expanded to fill a defined defect or cage site; and has highly desirable physical properties such as improved cohesiveness, elasticity and ability to **mold** to a desired **shape**. The composition holds a desired **shape** better than conventional **osteogenic** compositions, permits the **shaped** composition or device to stay in place in an **implant** site better than other compositions or devices.

13/25,K/26 (Item 26 from file: 350) [Links](#)

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\*\*\* CURRENT APPLICATION \*\*\*

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0014233573 & Drawing available

WPI Acc no: 2004-419519/200439

Related WPI Acc No: 2002-740210; 2002-740212; 2002-740213; 2003-110482; 2004-728388; 2005-404640; 2009-A89861

**Implant providing method for producing bone implant made from partially demineralized or demineralized bone, involves demineralizing block of cancellous bone having first geometry, before block is wet and compressed to second geometry**

Patent Assignee: SYNTHES USA (SYNT-N)

Inventor: ANGELUCCI C M; BOYER M L; PAUL D C

Patent Family ( 1 patents, 1 & countries )

Patent Number	Kind	Date	Update	Type
US 20040107003	A1	20040603	200439	B

US 20040107003

Local Applications (no., kind, date): US 2001271745 P 20010228; US 2001927335 A 20010813; US 2003718804 A 20031124

Priority Applications (no., kind, date): US 2001271745 P 20010228; US 2001927335 A 20010813; US 2003718804 A 20031124

**Alerting Abstract US A1**

NOVELTY - The method involves demineralizing a **block** of **cancellous bone** (40) having a first geometry, before the **block** is **wet**. The **wet block** is **compressed** from a first geometry to a second geometry.

USE - For **producing bone implant** made from partially demineralized or demineralized **bone** and used to **treat bone** fractures and defects.

ADVANTAGE - Ensures reliable formation of **bone** from partially demineralized or demineralized **bone**.

DESCRIPTION OF DRAWINGS - The figure shows the isometric view of the **cortical** shell.

40 Block of cancellous bone  
 42 Pellet  
 44 Cylinder  
 46 Cage  
 48 Perforations

13/25,K/35 (Item 35 from file: 350) [Links](#)

Fulltext available through: [Order File History](#)

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0013341761 & Drawing available

WPI Acc no: 2003-429392/200340

Related WPI Acc No: 2000-558372; 2008-A95080; 2008-L98374

XRAM Acc no: C2003-113340

XRFX Acc No: N2003-342833

**Load-bearing osteoimplant for repairing bone defects and injuries, and repairing hard tissues, in humans and animals, comprises shaped, coherent mass of bone particles**

Patent Assignee: BOYCE T M (BOYC-I); MANRIQUE A (MANR-I); OSTEOTECH INC (OSTE-N); SHIMP L (SHIM-I); WINTERBOTTOM J M (WINT-I)

Inventor: BOYCE T M; MANRIQUE A; SHIMP L; WINTERBOTTOM J M

Patent Family ( 2 patents, 1 & countries )

Patent Number	Kind	Date	Update	Type
US 20030039676	A1	20030227	200340	B
US 6696073	B2	20040224	200415	E

US 20030039676

Local Applications (no., kind, date): US 1999256447 A 19990223; US 2001911562 A 20010724; US 2002229767 A 20020827; US 2002229767 A 20020827

Priority Applications (no., kind, date): US 1999256447 A 19990223; US 2001911562 A 20010724; US 2002229767 A 20020827

#### Alerting Abstract US A1

NOVELTY - A load-bearing **osteoimplant** (OI) (62) comprises a **shaped**, coherent **mass of bone particles**.

DESCRIPTION - INDEPENDENT CLAIMS are also included for:

**production** of load-bearing OI, which involve providing aggregate containing **bone particles** and optionally with components such as binder, filler, plasticizer, **wetting** agent, surface active agent, biostatic/biocidal agent, bioactive substance, reinforcing material and/or reinforcing structure. The aggregate is **shaped** into coherent **mass** in at least one **shaping** operation to provide **shaped** composite having an initial configuration for subsequent **shaping** into desired OI or a final configuration corresponding to OI; and an integral **implant** insertion instrument and **implant**, comprises an **implant** insertion instrument portion integrally attached to an **implant** portion (OI) by a weakened, breakaway connection such that on insertion of OI portion at the **implantation** site, the instrument portion is separated from the OI portion by a break-away force was applied.

USE - For repairing **bone** defects and injuries, and also for repairing **hard tissues**, in humans and animals.

ADVANTAGE - The **osteoimplant** (OI) possessing sufficient strength in body **fluids** enables OI to bear loads. OI having pores or cavities permits

revascularization and enables incorporation in host. OI promotes formation of **bone tissues** within and around **implant**, and is capable of gradually transforming support loads to the host **bone tissue** as it remodels. The **manufacture** of OI is simple. OI obtained by the method has excellent bulk density, **wet compressive** strength, mechanical strength and is highly biocompatible.

DESCRIPTION OF DRAWINGS - The figure shows fibular wedged **shaped** load-bearing **osteointerplant**.

62 Load-bearing **osteointerplant**

**Extension Abstract** ...were mixed with an aqueous glycerol solution and soaked for 4-12 hours. The particles were then stained, placed in 28 mm diameter cylindrical press mold and pressed at 10000 psi for 15 minutes. The obtained compressed pellet was heated for 4 hours at 45 (deg)C, to obtain an implant. OI was frozen at -70 (deg)C for 1.5 hours and freeze dried. Obtained OI had bulk density of 1.34 g/cm<sup>3</sup>, height of 29 nm and **wet compressive** strength of 3 MPa. **Extension Abstract Image** Original Publication Data by Authority Argentina Publication No. ... **Claims:** What is claimed is: 1. A load-bearing **osteointerplant** comprising a **shaped**, coherent **mass** of **bone** particles possessing a bulk density of greater than about 0.7 g/cm<sup>3</sup> and a **wet compressive** strength of at least about 3 MPa.

13/25, K/38 (Item 38 from file: 350) [Links](#)

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0012880926 & & Drawing available

WPI Acc no: 2002-740213/200280

Related WPI Acc No: 2002-740210; 2002-740212; 2003-110482; 2004-419519; 2004-728388; 2005-404640; 2009-A89861

**Forming method for demineralized bone implant, involves demineralizing cancellous bone section, then compressing bone section into smaller geometry and drying same bone section**

Patent Assignee: ANGELUCCI C M (ANGE-I); BOYER M L (BOYE-I); PAUL D C (PAUL-I); SYNTHES (SYNT-N); SYNTHES USA (SYNT-N); SYNTHES GMBH (SYNT-N)

Inventor: ANGELUCCI C M; BOYER M L; PAUL D C; ANGELUCCI C; BOYER M; PAUL D

Patent Family ( 8 patents, 95 & countries )

Patent Number	Kind	Date	Update	Type
US 20020120347	A1	20020829	200280	B
WO 2002069818	A2	20020912	200280	E
US 6652593	B2	20031125	200378	E
AU 2001283368	A1	20020919	200433	E
EP 1424948	A2	20040609	200438	E
AU 2001283368	A8	20051027	200624	E
EP 1424948	B1	20081210	200904	E
DE 60136971	E	20090122	200909	E

US 20020120347

Local Applications (no., kind, date): US 2001271745 P 20010228; US 2001927335 A 20010813; WO 2001US25455 A 20010814; US 2001927335 A 20010813; AU 2001283368 A 20010814; EP 2001962169 A 20010814; WO 2001US25455 A 20010814; AU 2001283368 A 20010814; EP 2001962169 A 20010814; WO 2001US25455 A 20010814; DE 60136971 A 20010814; EP 2001962169 A 20010814; WO 2001US25455 A 20010814

Priority Applications (no., kind, date): US 2001271745 P 20010228; US 2001271745 P 20010228; US 2001927335 A 20010813; US 2001927333 A 20010813; US 2001927334 A 20010813; US 2001927335 A 20010813

#### Alerting Abstract US A1

NOVELTY - The method involves demineralizing a **cancellous bone** section of a predetermined geometry. The **bone** section is obtained from e.g. femur, tibia, humerus, fibula, ulna. The demineralized **bone** section is then **compressed** to a smaller geometry and then **dried**. The **bone** section is then filled into a space, a **bony** defect or a cavity.

DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

a method of maintaining distance between vertebral bodies;  
a method of replacing nucleus of a vertebral disc;  
and an **implant**.

USE - For forming demineralized **bone implant** for filling voids, **bone** defects or other regions e.g. cavities, within spinal cages, as well as **bony** defects caused by removal of **bone** screws or diseased **bone**. Also used as e.g. **cortical** shell, burr hole cover in cranial region of skull.

ADVANTAGE - Enables demineralized **cancellous bone** to be used as **soft** substance for enhancing anatomical areas during e.g. plastic surgery, face lifts, chin augmentations, cheek enhancements, eye brow lifts, or suited for filling defect regions caused by disease, congenital conditions or surgical procedure. Minimizes degree of brittleness of **bone**. Makes **implant** suitable in **treatment** of brain problems e.g. tumors, aneurysm, blood clots, head injuries, abscesses, as well as medical procedures e.g. laminoplasty, nucleus replacements, disc or ligament replacement.

DESCRIPTION OF DRAWINGS - The figure shows the perspective view of a **cortical** shell.

Claims: An **implant** comprising demineralized **cancellous bone**, with the **cancellous bone** comprising a non-particulate portion of a **bone**, wherein the **implant** is capable of being **softened** and **compressed** into a smaller first **shape** and **hardened** in said first **shape**, and capable of expanding into a second **shape** larger than said first **shape** when **resoftened** and permitted to expand.

13/25,K/43 (Item 43 from file: 350) [Links](#)

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0012395826

WPI Acc no: 2002-339519/200237

XRAM Acc no: C2002-097486

RRPX Acc No: N2002-266987

**Treatment of monolithic bone, useful for conserving mechanical strength of monolithic bone e.g. implant or graft, comprises contacting bone with bio-compatible mechanical strength-conserving agent, dehydrating and packaging**

Patent Assignee: OSTEOTECH INC (OSTE-N)

Inventor: BOYCE T M; SHIMP L A

Patent Family ( 4 patents, 95 + countries )

Patent Number	Kind	Date	Update	Type
WO 2002015948	A2	20020228	200237	B

AU 200186755	A	20020304	200247	E
EP 1311309	A2	20030521	200334	E
AU 2001286755	A8	20051013	200611	E

WO 2002015948

Local Applications (no., kind, date): WO 2001US26553 A 20010824; AU 200186755 A 20010824; EP 2001966222 A 20010824; WO 2001US26553 A 20010824; AU 2001286755 A 20010824

Priority Applications (no., kind, date): US 2000644521 A 20000824

#### Alerting Abstract WO A2

NOVELTY - Monolithic **bone** is treated by:

contacting the **bone** with a bio-compatible mechanical strength-conserving agent(s) (BCMSCA);  
**dehydrating the bone**; and  
**packaging the dehydrated bone**.

The BCMSCA is an organic **liquid** which is capable of penetrating and remaining in the **bone** during its **dehydration**, **packaging** and storage.

DESCRIPTION - INDEPENDENT CLAIMS are also included for:

A **rehydrated strength-conserved shaped bone implant**, which is prepared by:  
 contacting the **bone** with BCMSCA;

**dehydrating the bone**;

**packaging the bone**; and

**rehydrating the packaged bone** prior to or during **implantation**; and

A method for the utilization of **bone**, for repairing ethmoid, frontal, nasal, occipital, parietal, temporal, mandible, maxilla, zygomatic, cervical vertebra, thoracic vertebra, lumbar vertebra, sacrum, rib, sternum, clavicle, scapula, humerus, radius, ulna, carpal **bones**, metacarpal **bones**, phalanges, ilium, ischium, pubis, femur, tibia, fibula, patella, calcaneus, tarsal and/or metatarsal **bones** comprises:

exposing a surgical site;

inserting the **bone** into the surgical site; and

closing the surgical site.

USE - For conserving mechanical strength of monolithic **bone** useful as **implant** or **graft**, for repairing **bones**, such as ethmoid, frontal, nasal, occipital, parietal, temporal, mandible, maxilla, zygomatic, cervical vertebra, thoracic vertebra, lumbar vertebra, sacrum, rib, sternum, clavicle, scapula, humerus, radius, ulna, carpal **bones**, metacarpal **bones**, phalanges, ilium, ischium, pubis, femur, tibia, fibula, patella, calcaneus, tarsal and/or metatarsal **bones** (all claimed), in orthopedics, neurosurgery, oral and maxillofacial surgeries, joint reconstructions, repairs of vertebral column, repair of spinal injuries, fixation of fractures, discectomy, laminectomy, excision of spinal cord tumors, etc.

ADVANTAGE - The method of **treating monolithic bone** with mechanical strength-conserving agent, effectively conserves mechanical strength of **bone** during **dehydration**, **packaging** and storage of **bones**. The method also maintains the **bone** strength throughout **rehydration** and **implantation** of **bone** (claimed). The method **reduces** dimensional changes associated with lyophilization of **bone**, improves toughness of **bone grafts**, minimizes negative impact on the biological properties of the **bone grafts** and minimizes the tendency for a partially **rehydrated-dehydrated graft** to fracture due to insertion forces applied by the surgeon. The sonication of the agent and the **bone** effectively

improves the penetration property of the **agent** into the **bone tissues**. The method which is rapid, effectively maintains the bio-mechanical properties of **bones**, such as **compression** strength, flexural modulus, torsional modulus and yield strength.

The **treated** monolithic **bone** effectively demonstrates less shrinkage after **dehydration** than lyophilized **bone**. The bio-compatible and non-toxic agent utilized in the method effectively maintains the properties of **implant** for prolonged period, without causing any undesirable **changes** and does not interfere with normal healing of the **bone graft**. The mechanical strength-conserving agent which acts as antimicrobial/preservation agent effectively preserves shelf-life of **packaged dehydrated bone** for prolonged period, and also acts as **wetting** agent to effectively **decrease** rehydration time.

13/25,K/51 (Item 51 from file: 350) [Links](#)

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0010155517 & & Drawing available

WPI Acc no: 2000-464322/200040

Related WPI Acc No: 1998-413678; 1998-427510; 2001-615401

XRAM Acc no: C2000-139820

XRFX Acc No: N2000-346454

**Load bearing hard tissue implant for joining tissues or attaching surgical instruments comprises swellable implant body with channel for suture and load distributing device**

Patent Assignee: NEUCOLL INC (NEUC-N)

Inventor: BROWN M K C; CASSIDY J J; CHU G H; RICE J; SCHROEDER J A; SHENOY V N; YEUNG J E

Patent Family ( 1 patents, 1 & countries )

Patent Number	Kind	Date	Update	Type
US 6083522	A	20000704	200040	B

US 6083522

Local Applications (no., kind, date): US 1997781012 A 19970109; US 1997833874 A 19970410; US 19984550 A 19980108

Priority Applications (no., kind, date): US 1997781012 A 19970109; US 1997833874 A 19970410; US 19984550 A 19980108

**Alerting Abstract US A**

NOVELTY - A load bearing **hard tissue implant** comprises: a resorbable, swellable **implant** body with at least one hollow channel adapted to receive at least one suture; and a load-distributing device adapted to hold a suture.

The **implant** body is made from a **dehydrated** crosslinked biocompatible polymer.

DESCRIPTION - INDEPENDENT CLAIMS are included for:

**preparation of an implant body for use in a load bearing implant device for hard tissue repair; and methods for anchoring a surgical device into a hard tissue and for securing hard tissues to each other using the implant.**

USE - For joining **tissues** or attaching surgical instruments (e.g. screws, rods or pins) to **hard tissue**, increasing its load bearing capacity  
DESCRIPTION OF DRAWINGS - The figure shows a perspective view of the **implant**:

1 **Implant**

2 **Implant** Body

3 Load Distributing Device  
4 Suture

**Technology Focus** ...formaldehyde or glutaraldehyde) and/or a functionally activated synthetic **hydrophilic** polymer (especially multifunctionally activated polyethylene glycol). Alternatively, the crosslinking is non-covalent, carried out by **drying**, irradiating, **heating** or **compressing**. The biocompatible polymer is collagen, especially fibrillar collagen. The **implant** body also comprises... .. mixing a biocompatible polymer with a crosslinking agent; adding to a **mold** before crosslinking takes place; allowing to react in the **mold** to form a **matrix**; and **drying** to matrix to form a **dehydrated implant** body. **Extension Abstract**

13/25,K/53 (Item 53 from file: 350) [Links](#)

Fulltext available through: [Order File History](#)

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0009419335

WPI Acc no: 1999-356802/199930

XRAM Acc no: C1999-105451

XPFX Acc No: N1999-265614

**Extrudable allograft bone tissue material for filling surgical sites**

Patent Assignee: GERTZMAN A A (GERT-I); STEVENSON S (STEV-I)

Inventor: GERTZMAN A A; STEVENSON S

Patent Family ( 1 patents, 1 & countries )

Patent Number	Kind	Date	Update	Type
US 5910315	A	19990608	199930	B

US 5910315

Local Applications (no., kind, date): US 1997943549 A 19970718

Priority Applications (no., kind, date): US 1997943549 A 19970718

**Alerting Abstract** US A

NOVELTY - Extrudable, **shape** retaining semisolid **bone** composition made from mineralized/demineralized **allograft bone** particles has sufficient internal cohesiveness and self-adhesion to be extrudable and yet retains the **shape** of the container from which it is extruded.

DESCRIPTION - A method for filling a surgical site with **bone** material comprises: placing a **mass** of lyophilized **bone** chips of predetermined mixed **size** of 100 microns to 2 mm, the chips including a **packing** of the interstitial spaces between the larger granular **tissue** particles of particulate **cortical bone** powder of 100-300 microns and larger **sized** granular **tissue** particles in a straight walled barrel of a syringe having a circular opening at the distal end of 8-15 mm diameter; **tamping** the **mass** of **bone** chips to fill air pockets in the syringe; adding a volume of sterile **fluid** of 3-6 times the bulk of the volume of the **mass** of **bone** chips to provide adequate **wetting**; allowing the **fluid** to flow through the **mass** of **bone** chips to fully **hydrate** the **bone** chips for a period of time **hydrating** the **bone** chips until the **mass** is fully reconstituted from its initial lyophilized state and obtains chip self-adherence conforming to the **shape** of the lumen of the barrel of the syringe and retain such **shape** and geometric integrity; draining sterile **fluid** from the syringe; and depressing the plunger of the syringe and extruding the **shaped bone** material in a semi-solid **mass** which retains its **shape** and integrity in a surgical site. INDEPENDENT CLAIMS are also included for: (1) a method of filling a surgical site with a **shape**-retaining, semi-

solid **bone** composition, the method comprises: placing a plurality of lyophilized **bone** particles of mixed **sizes** ranging from a particulate powder mixed with larger granular **tissue** particles. The lyophilized **bone** particles comprising a mixture containing 75 vol% of lyophilized, demineralized **cortical/cancellous bone** powder ranging from 0.5-2 mm particle **size** and 25 vol% of lyophilized, demineralized **cortical bone** powder ranging from 100-300 microns **size** to provide a **bone** composition with a **packing** of interstitial spaces between the larger granular **tissue** particle with particulate powder or other granular **tissue** particles in a straight-walled extrusion vessel having an opening at the distal end, the opening having the same dimensions as the interior of a spinal fusion chamber; pouring a volume of **hydrating** solution into an open proximal end of the extrusion vessel and allowing the solution to flow through the **mass** of the **bone** particles to fully **hydrate** the same; removing the air bubbles from the **hydrating** solution which adhere to the plurality of the **bone** particles; allowing the **bone** particles to **hydrate** for at least 20 minutes in the solution so that the **bone** particles become an extrudable, **shape**-retaining semi-solid **mass**; and extruding the **bone** particle composition from the extrusion vessel into the surgical site in a semi-solid **shape** which retains the **shape** of the interior of the vessel; (2) an extrudable, **shape**-retaining **bone** filler composition comprising: a **mass** of **freeze dried** demineralized **bone** particles having a particle **size** of 100-1000 microns, and **packaged** together with the smaller particles **packing** the interstitial spaces between the larger granular **tissue** particles in a walled container so that the interstices formed between the largest **bone** particles are filled; and a sterile **hydrating** agent having a volume of one to three to one to six in relation to the volume of the **bone** particle **mass**, and an elution speed through the **bone** particle **mass** of 2-6 minutes. The **bone** particle **mass** is placed in contact with the **hydrating** agent for at least 20 minutes to provide a swell volume of the **bone** particles of at least about 40%; and (3) an extrudable, **shape**-retaining **bone** filler composition comprising: a **mass** of **freeze dried** demineralized **cancellous bone** particles having a particle **size** of 250-420 microns, and **packed** together in a walled container so that the interstices between the largest **bone** particles are filled; and a sterile **hydrating** agent having a volume of one to three to one to six in relation to the volume of the **bone** particle **mass**, and an elution speed over 5 minutes and when **immersing** the **bone** particle **mass**, for at least 20 minutes to provides a swell volume of the **bone** particles of 50-150% .

USE - The allograft **bone** powder composition is especially useful for use in surgery of the spinal column and other **bone** areas.

ADVANTAGE - The composition has sufficient internal cohesiveness and self-adhesion to be extrudable and yet is capable of retaining the **shape** of the extrusion orifice. Optimum space filling is possible, the smaller particles filling the interstices between the larger particles. Use of chemical compounds is avoided thus avoiding adverse reactions in the patient.

**Claims:**placing a **mass** of lyophilized **bone** chips of predetermined mixed **size** ranging from 100 microns to 2.0 mm, said **mass** of chips including a **packing** of the interstitial **spaces** between the larger granular **tissue** particles of particulate **cortical bone** powder ranging from about 100 to about 300 microns and larger **sized** granular **tissue** particles... .. walled barrel of a syringe having a circular opening at the distal end thereof, ranging from about 8 mm to about 15 mm in diameter;**tamping** the **mass** of **bone** chips to fill air pockets in the syringe;adding a volume of sterile **fluid** ranging from about 3 to about 6 times the bulk of the volume of the **mass** of **bone** chips to provide adequate **wetting**;allowing the **fluid** to flow through said **mass** of **bone** chip to fully **hydrate** the **bone** chips for a period of time **hydrating** the **bone** chips until the **mass** is fully reconstituted **from** its initial lyophilized state and



obtains chip self-adherence conforming to the **shape** of the lumen of the barrel of the syringe and retain such **shape** and geometric integrity; draining sterile **fluid** from the syringe; and depressing a plunger of the syringe and extruding the **shaped bone** material in a semi-solid **mass** which retains its **shape** and integrity in a surgical site.

13/25,K/55 (Item 55 from file: 350) [Links](#)

Fulltext available through: [Order File History](#)

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0009071914

WPI Acc no: 1998-427510/199836

Related WPI Acc No: 1998-413678; 2000-464322; 2001-615401

XRAM Acc no: C1998-128832

XRXP Acc No: N1998-333714

**Load-bearing hard tissue implants for hard- tissue repair in mammals - comprise resorbable, swellable implant body consisting of dehydrated, crosslinked, biocompatible polymer, used e.g. to repair rotator cuffs**  
Patent Assignee: COHESION TECHNOLOGIES INC (COHE-N)

Inventor: BROWN M K; BROWN M K C; CASSIDY J J; CHU G H; RICE J; SCHROEDER J A; SHENOY V N; YEUNG J E

Patent Family ( 2 patents, 79 & countries )

Patent Number	Kind	Date	Update	Type
WO 1998030141	A2	19980716	199836	B
AU 199860198	A	19980803	199850	E

WO 1998030141

Local Applications (no., kind, date): WO 1998US414 A 19980108; AU 199860198 A 19980108

Priority Applications (no., kind, date): US 1997781012 A 19970109; US 1997833874 A 19970410

#### Alerting Abstract WO A2

**Load-bearing hard tissue implants** comprise resorbable, swellable **implant** body consisting of a **dehydrated**, crosslinked, biocompatible polymer.

Also claimed are (1) a method for joining second **tissue** to a first **hard tissue** in a mammal body, comprising (a) forming a cavity in the first **tissue**; (b) inserting a load-bearing **implant** into the cavity; (c) allowing the **implant** body to rehydrate in situ to anchor the **implant** into the first **tissue**; and (d) attaching a second **tissue** to the **implant** using the suture; (2) a method for anchoring surgical devices into **hard tissue** comprising (a) forming a cavity in the first **tissue**; (b) inserting a load-bearing **implant** comprising into the cavity; (c) inserting the surgical device into the **implant**; and (d) before or after (c) allowing the **implant** body to rehydrate in situ to anchor the **implant** into the **hard tissue**; and (3) a method for securing first and second **hard tissues** comprising (a) inserting at least one load-bearing **implant** into the **hard tissues** such that each load bearing **implant** transveres both **hard tissues**; and (b) allowing the **implant** body to rehydrate in situ to anchor the **implant** into the first and second **tissues**.

USE - **Implants** are used in load-bearing devices for **hard-tissue** repair in mammals. They may be used to repair rotator cuffs (claimed).

ADVANTAGE - As the **implant** bodies swell after insertion, the **implants** avoid the need for anchoring structures such as barbs, fins and wings. They may be combined with other surgical devices such as sutures, screws, pins and rods

to enhance the effectiveness of **tissue** repair. The **implants** initially provide adequate mechanical integrity while later serving as a scaffold for **tissue** in-growth. The **implants** are uniformly **shaped** and swellaible.

**Documentation Abstract** Load-bearing **hard tissue implants** comprise resorbable, swellaible **implant** body consisting of a **dehydrated**, crosslinked, biocompatible polymer... .. c) allowing the **implant** body to **rehydrate** in situ to anchor the **implant** into the first **tissue**; and... .. d) before or after (c) allowing the **implant** body to **rehydrate** in situ to anchor the **implant** into the **hard tissue**; and... .. b) allowing the **implant** body to **rehydrate** in situ to anchor the **implant** into the first and second **tissues**...effectiveness of **tissue** repair. The **implants** initially provide adequate mechanical integrity while later serving as a scaffold for **tissue** in-growth. The **implants** are uniformly **shaped** and swellaible. ... ..The biocompatible polymer is non-covalently crosslinked. Crosslinking is achieved by **drying**, irradiating, **heating** or **compression**. The **biocompatible** polymer is collagen, preferably fibrillar collagen... ..b) introducing mixture into **mould** of desired **shape** before substantial crosslinking has occurred between the polymer and the crosslinking agent... ..d) **drying** the matrix to **form** a **dehydrated implant** body **Documentation Abstract Image**

13/25,K/58 (Item 58 from file: 350) [Links](#)

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0008276480

WPI Acc no: 1997-385061/199735

XRAM Acc no: C1997-123417

XRFX Acc No: N1997-320606

**Preparation of shaped material from bone particles - providing improved tensile strength and minimal bone particle disassociation upon rehydration**

Patent Assignee: **OSTEOTECH INC (OSTE-N)**

Inventor: **DAUGHERTY M; DOWD M; MCMICKLE J; SCARBOROUGH N; SCARBOROUGH N L**

Patent Family ( 9 patents, 69 & countries )

Patent Number	Kind	Date	Update	Type
WO 1997025941	A1	19970724	199735	B
AU 199715350	A	19970811	199747	E
EP 880345	A1	19981202	199901	E
US 6436138	B1	20020820	200257	E
EP 880345	B1	20060405	200624	E
DE 69735625	E	20060518	200635	E
CA 2243365	C	20060725	200650	E
ES 2260783	T3	20061101	200673	E
DE 69735625	T2	20061221	200702	E

WO 1997025941

Local Applications (no., kind, date): WO 1997US644 A 19970116; AU 199715350 A 19970116; EP 1997901455 A 19970116; WO 1997US644 A 19970116; US 199610127 P 19960117; WO 1997US644 A 19970116 ; US 1998155064 A 19980918; EP 1997901455 A 19970116; WO 1997US644 A 19970116; DE 69735625 A 19970116; EP 1997901455 A 19970116; WO 1997US644 A 19970116; CA 2243365 A 19970116; WO 1997US644 A 19970116; EP 1997901455 A 19970116; DE 69735625 A 19970116; EP 1997901455 A 19970116; WO 1997US644 A 19970116

Priority Applications (no., kind, date): US 199610127 P 19960117; US

1998155064 A 19980918

**Alerting Abstract WO A1**

**Preparation of shaped material from bone particles (BP)** comprises: (a) applying a **liquid slurry** of BP to a support; (b) removing excess **liquid** to provide a coherent **shaped mass**; and (c) warming at a pre-determined temperature for a pre-determined time. The **shaped mass prepared** as above is claimed per se. Also claimed is a **bone product** comprising a coherent **heat-treated shaped mass** of demineralised, elongated **bone particles**.

**USE** - The demineralised **bone powder** is known to be useful in the repair of **bone defects** and for fabrication of **implants**.

**ADVANTAGE** - The **bone mass** exhibits enhanced tensile strength and minimal **bone particle disassociation** upon **rehydration** thus improving **product handling** and application at the operative site. The **product** has improved capacity to maintain its cohesive properties and exhibit minimal **bone particle disassociation** upon **rehydration**.

**Documentation Abstract Preparation of shaped material from bone particles (BP)** comprises... .. b) removing excess **liquid** to provide a coherent **shaped mass**; and... .. The **shaped mass prepared** as above is claimed per se... .. Also claimed is a **bone product** comprising a coherent **heat-treated shaped mass** of demineralised, elongated **bone particles**... .. **ADVANTAGE** - The **bone mass** exhibits enhanced tensile strength and minimal **bone particle disassociation** upon **rehydration** thus improving **product handling** and application at the operative site... .. The **product** has improved capacity to maintain its cohesive properties and exhibit minimal **bone particle disassociation** upon **rehydration**... .. The warming step comprises placing the **mould support** and the **sheet of DMBP** into a **heating device** and **heating** to 22-55 (especially 45) (deg)C for 2-4 (especially 3) hours... .. The **process** includes **drying** the **shaped mass** subsequent to warming, preferably including lyophilisation... .. The **process** further comprises **compressing** the **shaped mass** of DMBP during warming, preferably by placing a **compressive cover** on the **mould** to apply **compressive forces** to the **sheet** of DMBP. (SA)Documentation Abstract Image

18/25,K/9 (Item 9 from file: 350) [Links](#)Fulltext available through: [Order File History](#)

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0012746302 &amp; Drawing available

WPI Acc no: 2002-599178/200264

Related WPI Acc No: 2002-362852

XRPX Acc No: N2002-475290

**Spinal implant for fusing adjacent vertebrae, has channel and fibrous bone element which is fitted into channel of discrete bone element of curved structure**

Patent Assignee: **OSTEOTECH INC (OSTE-N)**

Inventor: ANNUNZIATO S; KAES D R; MARTZ E; SHIMP L A

Patent Family ( 3 patents, 2 &amp; countries )

Patent Number	Kind	Date	Update	Type
US 20020091447	A1	20020711	200264	B
US 6706067	B2	20040316	200420	E
AU 2002225831	A8	20050915	200569	E

US 20020091447

Local Applications (no., kind, date): US 2000705377 A 20001103; US 20018279 A 20011105; US 20018279 A 20011105; AU 2002225831 A 20011102  
 Priority Applications (no., kind, date): US 2000705377 A 20001103; US 20018279 A 20011105

#### **Alerting Abstract US A1**

NOVELTY - A discrete **bone** element (10) exhibiting negligible **bone** growth factor, has a curved structure which forms a channel (26) with two side surfaces (32,34). Another discrete fibrous **bone** element formed of demineralized **cortical bone** fibers or powder, has a structure so as to fit into the channel. The elements are connected through a pin.

DESCRIPTION - An INDEPENDENT CLAIM is included for fusion **implant** formation method.

USE - For fusing adjacent vertebrae.

ADVANTAGE - The structure of **bone** elements simplifies the assembly **process** of the **implant**.

DESCRIPTION OF DRAWINGS - The figure shows an isometric view of the spinal **implant**.

10 Discrete **bone** element

26 Channel

32,34 Side surfaces

**Original Abstracts:** A C-shaped or ring shaped **implant** formed of **cortical bone** has its C-shaped or inner channel filled with a **bone** promoting material which is preferably demineralized **bone** fibers formed as a flexible **wet sheet** or may be cancellous **bone**, pressed **bone** fibers formed from demineralized **cortical bone** chips soaked in **acid**, or a flex material formed of demineralized **bone** growth promoting **bone** fibers... .. them to the outer **bone**. A filled **bone** ring may be sliced to form annular filled sections which are then divided into mirror image C-shaped halves each forming an **implant**. Flex material of **compressed bone** fibers may be formed with an opening **shaped** to receive a **cortical bone implant** element having a C-shaped channel. The flex material surrounds the **cortical bone** element and fills its channel. Other embodiments are disclosed... .. A C-shaped or ring shaped **implant** formed of **cortical bone** has its C-shaped or inner channel filled with a **bone** promoting material which is preferably demineralized **bone** fibers formed as a flexible **wet sheet** or may be cancellous **bone**, pressed **bone fibers** formed from demineralized **cortical bone** chips soaked in **acid**, or a flex material formed of demineralized **bone** growth promoting **bone** fibers. The discrete **bone** filler element... .. them to the outer **bone**. A filled **bone** ring may be sliced to form annular filled sections which are then divided into mirror image C-shaped halves each forming an **implant**. Flex material of **compressed bone** fibers may be formed with an opening **shaped** to receive a **cortical bone implant** element having a C-shaped channel. The flex material surrounds the **cortical bone** element and fills its channel. Other embodiments are disclosed. ...**Claims:**for promoting **bone** growth between said adjacent vertebrae, the second **bone** element having a **shape** that is complementary to said channel for forming an integral **implant** unit with said **bone** of the first type; and means for securing the first element to the second element...

18/25,K/11 (Item 11 from file: 350) [Links](#)

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0010973887 & & Drawing available

WPI Acc no: 2001-597807/200168

XRAM Acc no: C2001-176951

XPX Acc No: N2001-445712

**Cranium implant for use in brain surgery consists of a plate of spongy, cortical or compact bone material of human or animal origin preferably obtained by dehydration**

Patent Assignee: KOSCHATZKY K (KOSC-I); LOWEL M (LOWE-I); TUTOGEN MEDICAL GMBH (TUTO-N)

Inventor: KOSCHATZKY K; LOEWEL M; LOWEL M

Patent Family ( 5 patents, 93 & countries )

Patent Number	Kind	Date	Update	Type
DE 10014616	A1	20010927	200168	B
WO 2001072244	A1	20011004	200168	E
AU 200140557	A	20011008	200208	E
EP 1265554	A1	20021218	200301	E
US 20040059422	A1	20040325	200422	E

DE 10014616

Local Applications (no., kind, date): DE 10014616 A 20000324; WO 2001EP936 A 20010129; AU 200140557 A 20010129; EP 2001911548 A 20010129; WO 2001EP936 A 20010129; WO 2001EP936 A 20010129; US 2002239619 A 20021126

Priority Applications (no., kind, date): DE 10014616 A 20000324

#### Alerting Abstract DE A1

NOVELTY - A cranium **implant** consists of a plate (1) of spongy, **cortical** or **compact bone** material of human or animal origin.

USE - None given.

DESCRIPTION OF DRAWINGS - The drawing shows a plate of bovine **bone compact** material with holes and curvature.

1 bovine **bone compact** material ;

2 holes ; and

3 curvature .

23/25,K/41 (Item 41 from file: 350) [Links](#)

Fulltext available through: [Order File History](#)

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0014443876 & Drawing available

WPI Acc no: 2004-634586/200461

Related WPI Acc No: 1992-406998; 1992-407006; 1993-125932; 1993-404771; 1994-

092210; 1994-233340; 1994-240674; 1994-293055; 1995-146667; 1995-350397;

1996-238619; 1996-383554; 1997-020009; 1997-099322; 1997-447852; 1997-469887;

1997-558017; 1998-040884; 1998-100214; 1998-144669; 1998-239066; 1998-593885;

1999-130313; 1999-243084; 1999-243093; 1999-443091; 1999-478165; 1999-539487;

2000-115843; 2000-170338; 2000-316553; 2000-429846; 2000-464731; 2000-524078;

2000-531963; 2000-664285; 2001-060243; 2001-111909; 2001-146195; 2001-158464;

2001-225865; 2001-256661; 2001-335217; 2001-373618; 2001-464368; 2001-496417;

2001-513534; 2001-541212; 2001-580208; 2001-625006; 2002-025562; 2002-315057;

2002-382134; 2002-403322; 2002-404343; 2002-413208; 2002-425326; 2002-433604;

2002-434608; 2002-507513; 2002-565627; 2002-589815; 2002-627058; 2002-635503;

2002-642396; 2002-664619; 2002-673585; 2002-706046; 2002-711855; 2002-749526;

2003-029812; 2003-057064; 2003-089999; 2003-220849; 2003-247723; 2003-276880;

2003-277284; 2003-278066; 2003-278067; 2003-415342; 2003-416704; 2003-456139;

2003-479353; 2003-540700; 2003-558800; 2003-568878; 2003-596701; 2003-687063;

2003-695887; 2003-720043; 2003-743415; 2003-747318; 2003-754600; 2003-778028;  
 2003-787950; 2003-874331; 2003-900689; 2004-060591; 2004-179103; 2004-280796;  
 2004-389208; 2004-389247; 2004-389274; 2004-487398; 2004-517208; 2004-517209;  
 2004-625134; 2004-651420; 2004-689912; 2005-010704; 2005-019512; 2005-029413;  
 2005-056915; 2005-466593; 2005-550885; 2005-618183; 2005-648883; 2005-796407;  
 2006-115457; 2006-170683; 2006-362313; 2006-567599; 2006-621350; 2006-716854;  
 2006-796978; 2007-006926; 2007-024680; 2007-025025; 2007-082278; 2007-324700;  
 2007-511983; 2007-569301; 2007-585308; 2007-891746; 2008-C35145; 2008-C62749;  
 2008-C75729; 2008-D00551; 2008-F48669; 2008-G01951; 2008-G50641; 2008-H10820;  
 2008-H54986; 2008-H70475; 2008-H88941; 2008-K90508  
 XRPX Acc No: N2004-501631

**Body tissue e.g. bone, stabilizing implant for tissue shaping/compressing apparatus, has core partially formed of allograft material which expands by imbibing fluid, and expandable retainer partially enclosing core**

Patent Assignee: BONUTTI P M (BONU-I)

Inventor: BONUTTI P M

Patent Family ( 1 patents, 1 & countries )

Patent Number	Kind	Date	Update	Type
US 20040172140	A1	20040902	200461	B

US 20040172140

Local Applications (no., kind, date): US 1991728247 A 19910812; US 1994273028 A 19940708; US 1996590193 A 19960123; US 1997834028 A 19970411; US 1999263006 A 19990305; US 2000602743 A 20000623; US 2001798870 A 20010301; US 2002279451 A 20021024 ; US 2004793265 A 20040304

Priority Applications (no., kind, date): US 1991728247 A 19910812; US 1994273028 A 19940708; US 1996590193 A 19960123; US 1997834028 A 19970411; US 1999263006 A 19990305; US 2000602743 A 20000623; US 2001798870 A 20010301; US 2002279451 A 20021024; US 2004793265 A 20040304

#### Alerting Abstract US A1

NOVELTY - The **implant** has a core partially formed of a desiccated **allograft** material which expands by imbibing **fluid**. An expandable retainer (330) is made of a polymeric material and partially encloses the core. The retainer includes a set of crossed filaments and a set of openings. The retainer imbibes body **fluid/water** from a host **tissue** (338) and creates a mechanical interlock.

USE - Used by a surgeon in a **tissue shaping/compressing** apparatus for stabilizing or **grafting** body **tissue** e.g. **bone** and ligament.

ADVANTAGE - The **implant** allows the **bone** or other **tissue** such as ligament to be **reshaped** while still leaving the **bone** in a whole condition and without substantial **tissue** damage. The use of living **tissue** in the **graft** promotes **bone** healing.

DESCRIPTION OF DRAWINGS - DESCRIPTION OF DRAWING - The drawing shows an expanding **tissue** retainer.

330 Expandable retainer

332 **Graft tissue**

334 **Tissue/bone** space

336 Edge

338 Host **tissue**

23/25,K/58 (Item 58 from file: 350) [Links](#)

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0012903440 & Drawing available

WPI Acc no: 2002-122484/200216

XPX Acc No: N2002-091867

**Osteogenic implants derived from bone can be laminated or three-dimensionally shaped**

Patent Assignee: **OSTEOTECH INC (OSTE-N)**

Inventor: **BOYCE T M; KAES D; SCARBOROUGH N L**

Patent Family ( 13 patents, 95 & countries )

Patent Number	Kind	Date	Update	Type
WO 2002002156	A2	20020110	200216	B
US 20020035401	A1	20020321	200224	E
AU 200170153	A	20020114	200237	E
EP 1296726	A2	20030402	200325	E
KR 2003027934	A	20030407	200353	E
EP 1296726	B1	20040204	200410	E
JP 2004501719	W	20040122	200411	E
NZ 523867	A	20040227	200418	E
DE 60101967	E	20040311	200419	E
ES 2215913	T3	20041016	200469	E
US 6808585	B2	20041026	200470	E
US 6863694	B1	20050308	200518	E
AU 2001270153	B2	20060706	200707	E

WO 2002002156

Local Applications (no., kind, date): WO 2001US20220 A 20010627; US 2000610026 A 20000703; US 2001973597 A 20011009; AU 200170153 A 20010627; EP 2001948706 A 20010627; WO 2001US20220 A 20010627; KR 2003700036 A 20030103; EP 2001948706 A 20010627; WO 2001US20220 A 20010627; WO 2001US20220 A 20010627; JP 2002506777 A 20010627; NZ 523867 A 20010627; WO 2001US20220 A 20010627; DE 60101967 A 20010627; EP 2001948706 A 20010627; WO 2001US20220 A 20010627; EP 2001948706 A 20010627; US 2000610026 A 20000703; US 2001973597 A 20011009; US 2000610026 A 20000703; AU 2001270153 A 20010627

Priority Applications (no., kind, date): US 2000610026 A 20000703; US 2001973597 A 20011009

#### Alerting Abstract WO A2

**NOVELTY** - The **osteointplant** is made up of elongate **bone**-derived elements, preferably comprising 20 to 99 percent by weight, and **bone powder**. The **bone**-derived elements are mixed with a binder and then mechanically **shaped**. The **implant** can also be of laminated construction.

**USE** - For **osteogenic osteointplants**, particularly in periodontal applications. **ADVANTAGE** - Can be **shaped** closely to the exterior of **bony** surfaces. Maintains its three-dimensional architecture even after **rehydration** and deformation prior to **implantation**. **Size of implant** is limited only by the total amount of starting material available and not by its **size** and **shape**.

**DESCRIPTION OF DRAWINGS** - The diagram shows a perspective view of the assembly of a **bone**-derived laminate **implant** possessing layers of partially demineralized **shaped bone** material alternating with other layers of partially demineralized **shaped bone** material and/or optional materials.

**Original Abstracts:**making an **osteogenic osteointplant** having not greater than about 32% void volume, the method comprising: providing a coherent **mass** of **bone**-derived particles; and, mechanically **shaping** the coherent **mass** of **bone**-derived particles to form an **osteogenic osteointplant** in the form of a flexible **sheet**... making an **osteogenic osteointplant** having not greater than about 32% void volume, the method comprising: providing a coherent **mass**

of **bone**-derived particles; and, mechanically **shaping** the coherent **mass** of **bone**-derived particles to form an **osteogenic osteoimplant** in the form of a flexible **sheet**... .. making an **osteogenic osteoimplant** having not greater than about 32% void volume, the method comprising: providing a coherent **mass** of **bone**-derived particles; and, mechanically **shaping** the coherent **mass** of **bone**-derived particles to form an **osteogenic osteoimplant** in the form of a flexible **sheet**... .. making an **osteogenic osteoimplant** having not greater than about 32% void volume, the method comprising: providing a coherent **mass** of **bone**-derived particles; and, mechanically **shaping** the coherent **mass** of **bone**-derived particles to form an **osteogenic osteoimplant** in the form of a flexible **sheet**... ..**Claims:**or more biocompatible components, the coherent **mass** formed at least in part from elongate **bone**-derived elements optionally in combination with **bone** powder; and,mechanically **shaping** the coherent **mass** of **bone** particles to form the **osteogenic osteoimplant**...

23/25,K/60 (Item 60 from file: 350) [Links](#)

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0012854507 & & Drawing available

WPI Acc no: 2002-713216/200277

Related WPI Acc No: 1999-190433

XRFX Acc No: N2002-562738

**Implant used for cervical vertebral fusion operation, has internal canal surrounded by circular, elliptical or asymmetrical-shaped continuous or discontinuous wall of cortical bone**

Patent Assignee: CARTER K C (CART-I); DULEBOHN D H (DULE-I); GROOMS J M (GROO-I); SANDER T (SAND-I)

Inventor: CARTER K C; DULEBOHN D H; GROOMS J M; SANDER T

Patent Family ( 1 patents, 1 & countries )

Patent Number	Kind	Date	Update	Type
US 20020138143	A1	20020926	200277	B

US 20020138143

Local Applications (no., kind, date): US 1997920630 A 19970827; US 1998701933 A 19980528; US 2001905683 A 20010716

Priority Applications (no., kind, date): US 1997920630 A 19970827; US 1998701933 A 19980528; US 2001905683 A 20010716

#### Alerting Abstract US A1

NOVELTY - An internal canal (104) is surrounded by a circular, elliptical or asymmetrical-shaped continuous or discontinuous wall of **cortical bone**.

DESCRIPTION - INDEPENDENT CLAIMS are also for the following:

a method for **manufacturing** an **implant**;  
a broach for **forming** a desired **shape** canal;  
and an apparatus for **forming** a **bone** plug.

USE - Used for cervical vertebral fusion operation in human and animals.

ADVANTAGE - Allows monitoring of fusion **implant** stability and reliability.

Enables to optimize retention of the **implant** within the cervical spine after



proper placement.  
DESCRIPTION OF DRAWINGS - The figure shows a fusion implant.  
104 Internal canal

**Original Abstracts:**fusion procedures. The **implant** is derived from allograft or autograft **cortical bone** sources, is machined to form a symmetrically or asymmetrically shaped (e.g. a substantially "D"-shaped) **implant** having a **canal running** therethrough according to methods of this invention, and inserted into the space between adjacent cervical vertebrae to provide support and induce fusion of the adjacent vertebrae. **Osteogenic, osteoinductive or osteoconductive materials** may be **packed** into the canal of the **implant** to expedite vertebral fusion and to allow autologous **bony ingrowth**. ...**Claims:****implant** comprising a canal surrounded by a continuous or discontinuous wall of **cortical bone** in the **shape** of a circle, an ellipse, or an asymmetric **shape**, thereby forming an **implant** having a top face and a bottom face, **each** of which is substantially planar, with said planes being substantially parallel to each other.

23/25,K/64 (Item 64 from file: 350) [Links](#)

Fulltext available through: [Order File History](#)

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0012386165

WPI Acc no: 2002-329629/200236

XRAM Acc no: C2002-095233

**Dehydrating monolithic bone, useful for implantation repair of bones, comprises treatment with dehydrating liquid, dehydration without lyophilization and packaging**

Patent Assignee: **OSTEOTECH INC (OSTE-N)**

Inventor: **BOYCE T M**

Patent Family ( 5 patents, 95 & countries )

Patent Number	Kind	Date	Update	Type
WO 2002015688	A2	20020228	200236	B
AU 200188411	A	20020304	200247	E
KR 2003036706	A	20030509	200358	E
EP 1359949	A2	20031112	200377	E
JP 2004506660	M	20040304	200417	E

WO 2002015688

Local Applications (no., kind, date): WO 2001US26603 A 20010824; AU 200188411 A 20010824; KR 2003702390 A 20030218; EP 2001968138 A 20010824; WO

2001US26603 A 20010824; WO 2001US26603 A 20010824; JP 2002520615 A 20010824

Priority Applications (no., kind, date): US 2000644614 A 20000824

**Alerting Abstract** WO A2

**NOVELTY** - Method for **dehydrating** a monolithic **bone** (A), intended for **implantation**, which conserves its biomechanical properties during **dehydration**, **packaging** and storage, comprises:

**treating** (A) with at least one **dehydrating liquid** (I);  
**dehydration** without lyophilization; and  
**packaging treated** (A).

DESCRIPTION - INDEPENDENT CLAIMS are also included for:

A method for **dehydrating** (A) which comprises:  
 contacting the **bone** with at least one biocompatible **dehydrating liquid**;  
 removing the **dehydrating liquid**; and  
 packaging the **dehydrated bone**; and  
 Use of (A) for repair of **bone** comprises:  
**exposing** a surgical site;  
**implanting** the **bone** in the surgical site; and  
 closing the surgical site.

USE - After **rehydration** (A) is **implanted** for repair of a wide range of **bones**,  
 e.g. to **treat** fractures or non-unions or to induce arthrodeses.

ADVANTAGE - **Dehydration** with (I) **produces** a tougher **product** than **freeze-drying** and smaller dimensional changes, with better retention of mechanical properties (**reduced risk of fracture during implantation**). The **dehydrated bone** can be stored for up to 5 years without excessive loss of strength.

**Original Abstracts:**A method for **dehydrating** a monolithic **bone** intended for **implantation** is provided. The **method** serves to conserve at least one of the biomechanical properties of the **bone** during the **dehydration** of the **bone** and its subsequent **packaging**. Also provided... .. A method for **dehydrating** a monolithic **bone** intended for **implantation** is provided. The **method** serves to conserve at **least** one of the biomechanical properties of the **bone** during the **dehydration** of the **bone** and its subsequent **packaging**. Also **provided** is a monolithic **bone** for **implantation** and a method of using the **bone** for the repair of damaged **bone**...

23/25,K/71 (Item 71 from file: 350) [Links](#)

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0010956617 & Drawing available

WPI Acc no: 2001-579737/200165

Related WPI Acc No: 1998-582418; 1999-633378; 2002-371085

XPX Acc No: N2001-431559

**Composite allograft for orthopedic surgery has cancellous bone chips that are molded and compressed with bone cement to preset shape having smooth inner surface and irregular outer surface**

Patent Assignee: UNIV ARKANSAS (UYAR-N)

Inventor: FLAHIFF C; HOGUE W; HOLLIS J M; NELSON C

Patent Family ( 1 patents, 1 & countries )

Patent Number	Kind	Date	Update	Type
US 6293971	B1	20010925	200165	B

US 6293971

Local Applications (no., kind, date): US 1996647424 A 19960311; US 1998121938 A 19980724; US 1999343135 A 19990629

Priority Applications (no., kind, date): US 1996647424 A 19960311; US 1998121938 A 19980724; US 1999343135 A 19990629

**Alerting Abstract** US B1

NOVELTY - **Cancellous bone** chips (73) are **molded** and **compressed** with **bone** cement to a predetermined **shape** having a smooth inner surface (72) consisting

essentially of **hardened bone** cement and an irregular outer surface (71) consisting essentially of exposed **cancellous bone** chips.  
 USE - For orthopedic surgery e.g. hip replacement surgery.  
 ADVANTAGE - Provides strong inner surface made of **hardened** cement material.  
 DESCRIPTION OF DRAWINGS - The figure is the sectional elevational view of a synthetic composite acetabular cup.  
 71 Outer surface  
 72 Inner surface  
 73 **Cancellous bone** chip

**Original Abstracts:** A composite **allograft** press comprises a loading frame and a two piece **mold** to form an composite **allograft** and in particular an acetabular cup from impacted **cancellous bone** chips and cement. Pressure is applied by a manually operated lever through a rack-and... ..mechanism to a plunger attached to one part of the **mold**. **Compression** load switches in-line with the plunger indicate the correct loading to the **mold** to **produce** a composite **allograft** in which the inner surface is smooth and comprised essentially of **hardened bone** cement material. The outer portion of the **allograft** may have limited cement... **Claims:** A composite **allograft**, comprising: **cancellous bone** chips **molded** and **compressed** with **bone** cement to a predetermined **shape** having an inner surface and an outer surface; said inner surface consisting essentially of **hardened bone** cement wherein...

23/25,K/81 (Item 81 from file: 350) [Links](#)  
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0010104471 & *Drawing available*

WPI Acc no: 2000-411585/200035

XRAM Acc no: C2000-124609

XRPX Acc No: N2000-307732

**Bone plug for blocking of canal in bone has radially expandable body of specified height, which is larger than its average wall thickness**

Patent Assignee: SPIERINGS P T J (SPIE-I)

Inventor: SPIERINGS P T J

Patent Family ( 6 patents, 88 & countries )

Patent Number	Kind	Date	Update	Type
WO 2000028926	A1	20000525	200035	B
NL 1010539	C2	20000515	200036	E
AU 200012969	A	20000605	200042	E
EP 1128788	A1	20010905	200151	E
JP 2002529195	W	20020910	200274	E
US 6669733	B1	20031230	200402	E

WO 2000028926

Local Applications (no., kind, date): WO 1999NL695 A 19991112; NL 1010539 A 19981112; AU 200012969 A 19991112; EP 199956343 A 19991112; WO 1999NL695 A 19991112; WO 1999NL695 A 19991112; JP 2000581976 A 19991112; WO 1999NL695 A 19991112; US 2001831718 A 20010718

Priority Applications (no., kind, date): NL 1010539 A 19981112

**Alerting Abstract** WO A1

NOVELTY - A **bone plug** has an at least nearly solid body that is radially

expandable. The height of the body is at most 8 times the average wall thickness of the body.

**DESCRIPTION** - A **bone plug** has an at least nearly solid body which expands radially at axial **compression**. It has two locking elements which can be fixed on various distances to each other, in between which the body with its axial boundaries is positioned. The first locking element (67) comprises a stem (71) which is provided with radial protrusions (73) which are positioned next to each other in an axial direction on the stem. The stem protrudes through an axial opening of the body. The second locking element is positioned around the stem and can lock behind the protrusions. The height of the body is at most 8 times the average wall thickness of the body.

**USE** - The **bone plug** is used in the medical field for permanent or temporarily **blocking** of a canal in a **bone**. The **bone plug** is especially suited for **blocking** of unround canals, like the canal of the femoral **bone** which has an oval-shaped cross-section with an irregular surface of the endosteal wall.

**ADVANTAGE** - The radial protrusions are located near to each other in the longitudinal direction of the stem, making **compression** of the body possible in smaller steps than with the known **bone plug**, where the protrusions are positioned on a large distance to each other. By this possibility of accurate control of the amount of **compression** of the body, the **bone plug** can better be installed in a canal and a canal can better be **blocked** than with the known **bone plug**.

**DESCRIPTION OF DRAWINGS** - The figure shows a longitudinal section of the **bone plug** fixed in an instrument in the **compressed** condition.

67 First locking element

71 Stem

73 Protrusions

77 Interrupted ring

79 Annular **shaped** plate

**Bone plug for blocking of canal in bone has radially expandable body of specified height, which is larger than its average wall thickness ...Original Titles:**BONE PLUG ... ..**Bone plug BONE PLUG Alerting Abstract ...known bone plug**, where the protrusions are positioned on a large distance to each other. By this possibility of accurate control of the amount of **compression** of the body, the **bone plug** can better be installed in a canal and a canal can better be **blocked** than with the known **bone plug**... Original Publication Data by AuthorityArgentinaPublication No. ...Original Abstracts:65) axially locked the **bone plug** comprises a first locking element (67) which is formed by a disc (69) with attached to it a stem (71) provided with saw tooth **shaped** protrusions (73) which protrudes through an axial opening in the body (65) and a second locking element (75) which is formed by an interrupted ring... .. one of the protrusions (73) and the annular plate (79) is positioned between the interrupted ring (77) and the body (65).Fixating of the **bone plug** (61) in the canal is carried out by pushing the interrupted ring (77) along the stem (71) until it locks behind one of the protrusions (73), whereby the...

23/25,K/83 (Item 83 from file: 350) [Links](#)

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0009736557

WPI Acc no: 2000-021962/200002

XRAM Acc no: C2000-005241

XPX Acc No: N2000-016236

**Producing a cleaned cut bone graft by centrifugation for transplanting into humans**

Patent Assignee: LIFE NET RES FOUND (LIFE-N)

Inventor: FORD L; WOLFINBARGER L

Patent Family ( 1 patents, 1 & countries )

Patent Number	Kind	Date	Update	Type
US 5977432	A	19991102	200002	B

US 5977432

Local Applications (no., kind, date): US 1997871601 A 19970609

Priority Applications (no., kind, date): US 1997871601 A 19970609

**Alerting Abstract US A**

NOVELTY - **Producing a cleaned cut bone graft for transplantation into humans** comprises centrifuging a cut **bone graft** to remove the **bone marrow** from **cancellous bone** spaces.

DESCRIPTION - INDEPENDENT CLAIMS are also included for:

cleaning a cut **bone graft** comprising selecting an intact **bone**, cutting it into one or more **grafts**, and centrifuging as above; and the **bone grafts** produced by the above methods.

USE - The **grafts** are used for clinical applications such as **transplanting** cadaveric **bones**, and large **bones** from other species into humans.  
 ADVANTAGE - The cleaning procedure effectively removes substantially all of the **bone marrow** elements effectively removing cells capable of harboring HIV which are abundant in **bone marrow** with minimal handling and **processing**, thus **reducing** the risk of viral, bacterial and fungal transmission. High pressure **washing** or exposure of the **graft** to negative **atmospheric** pressure is prevented. The **solvents** comprising a combination of solutes improves solvent penetrability into the **bone graft** and intensifies cavitation induced by ultrasonics. Alcohols and detergent solutions enhance solubility of **bone marrow**, **reduce** surface tension of aqueous solutions and inactivate virus and bacteria. Cadaveric **bones** are thus **processed** into clinically usable **bone grafts**.

**Technology Focus** ...subjected to sonic washing with a washing solution (A), incubated by soaking for >= 6 hours and further washed with washing (II). After washing with a **washing** solution (II), the **bone graft** is incubated in a solution comprising **water** and subjected to another centrifugation resulting in a cleaned **bone graft** essentially free from **bone marrow**. Prior to...  
**Extension Abstract** ...the container. The femur head was placed in a sterile container. The container was sealed and placed into the centrifuge. The **grafts** were centrifuged for 3 minutes to **dry** and remove any remaining **water**.

23/25,K/97 (Item 97 from file: 350) [Links](#)

Fulltext available through: [Order File History](#)

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0006687200 & Drawing available

WPI Acc no: 1994-067102/199409

XRAM Acc no: C1994-030063

XPX Acc No: N1994-052529

**Sterilising bone transplant material - using sealed vessel filled with sterile fluid for heating to given temp. and holding before cooling and freezing**

Patent Assignee: TULASZEWSKI O (TULA-I); TULASZOWSKI O (TULA-I)

Inventor: KNAEPLER H; KNAEPLER H P D; VON GARREL T

Patent Family ( 12 patents, 21 & countries )

Patent Number	Kind	Date	Update	Type
EP 584484	A1	19940302	199409	B
DE 4227830	C1	19940331	199412	E
CA 2104498	A	19940222	199419	E
TW 233267	A	19941101	199503	E
US 5429810	A	19950704	199532	E
JP 2506553	B2	19960612	199628	E
JP 7023993	A	19950127	199631	E
US 5591398	A	19970107	199708	E
CA 2104498	C	19990119	199914	E
KR 199701492	B1	19970211	199933	E
EP 584484	B1	19991013	199947	E
DE 59309831	G	19991118	200001	E

EP 584484

Local Applications (no., kind, date): EP 1993109964 A 19930622; DE 4227830 A 19920821; CA 2104498 A 19930820; TW 1993106786 A 19930823; US 1993109347 A 19930820; JP 1993200711 A 19930812 ; JP 1993200711 A 19930812; US 1993109347 A 19930820; US 1995418630 A 19950407; CA 2104498 A 19930820; KR 199315205 A 19930805; EP 1993109964 A 19930622; DE 59309831 A 19930622; EP 1993109964 A 19930622

Priority Applications (no., kind, date): DE 4227830 A 19920821

#### Alerting Abstract EP A1

To disinfect **bone transplant** material, the **transplant** (18) is prepd. and measured, and inserted into a vessel (13) of a known capacity. The vessel (13) is filled with a sterile **fluid** up to a vessel wall marking over the material (18), and the vessel is closed with a self-sealing cover (26) with a penetration zone (28). The closed vessel (13) is inserted into a **heater** (1) and **heated** over a constant initial time span to a final temp. and it is held at this temp. for a further time span according to the dimensions of the **transplant** material (18). The vessel (13) is then allowed to cool to room temp. The penetration zone (28) of the cover (26) is punctured, and a transfer set also punctures the cover of a catch vessel, for the **fluid** to be transferred from the vessel (13) to a catch container. The transfer set is removed, and the vessel (13) is placed in a cool zone to **freeze** the **transplant** material (18).

USE/ADVANTAGE - The technique is for the prepn. and sterilisation of **bone transplant** material, esp. human **spongiosa transplant** material. The sterilisation is simple and rapid, and can be effected in the operating theatre, without further **processing** and free of contamination, in a cost-effective action.

**Equivalent Alerting Abstract** ...Appts. for sterilising a **bone graft**, e.g. a human **spongiosa bone graft**, comprises (a) a housing having an upper surface contg. open-topped **heating** and cooling recesses; (b) a first container for receiving a **bone graft**; (c.... **Technology Focus** Original Publication Data by AuthorityArgentinaPublication No. ...Original Abstracts:An apparatus for sterilizing **bone grafts**, such as human **spongiosa grafts**, includes a container

for receiving the **bone graft** together with a quantity of sterile **liquid** sufficient to **cover** the **bone graft**. A penetrable self-sealing closure member is provided for closing the container, whereupon the container is initially **heated** at a given sterilizing **temperature** for a constant first period of time, and is subsequently **heated** for a variable second period of time, the duration of which is a function of the **size** of the **bone graft**. The **container** is then cooled to room temperature, and a transfer tube arrangement inserted at one end through the closure member to transfer the **liquid** within the...  
 ... A method and apparatus for sterilizing **bone grafts**, wherein the **bone graft** together with a quantity of sterile **liquid** sufficient to cover the **bone graft** is initially **heated** at a given sterilizing temperature for a constant first period of time, and is subsequently **heated** for a variable second period of time the **duration** of which is a function of the **size** of the **bone graft**. The **bone graft** is then cooled to room temperature, and the **liquid** transferred to a container. The sterilized **bone graft** is frozen, and the **liquid** in the container is analyzed for infectious...  
 ...**Claims:1.** Method of sterilizing **bone grafts**, especially human **spongiosa grafts**, comprising the following steps:

a) providing the **bone graft** (18) and evaluating its **size**,  
 b) placing the **bone graft** (18) in a vessel (13) of... .. **heating** apparatus (1) and **heating** the vessel (13) for a constant first period of time to a final temperature and maintaining this final temperature for a second period of time which is fixedly related to the measured **size** of the **bone graft** (18),  
 f) cooling the vessel (13) to room temperature,  
 g) penetrating the penetrationthe transfer set (33) from the vessel lid and introducing the vessel (13) into a cooling chamber in order to **freeze** the **bone graft** (18). ... .. Apparatus for sterilizing a **bone graft**, such as a human **spongiosa bone graft**, comprising: (a) a housing (1) having an upper surface (2) containing open-topped **heating** (3) and cooling (4) recesses; (b) a first container (13) receiving a **bone graft** (18), said **heating** and cooling recesses each being of a **size** to receive at least the bottom portion of said container when said container has a first vertical... .. **bone graft**; (c) closure means (26) for closing said container opening, said closure means being of the penetrable self-sealing type and including: (1) a **first** screw cap (26) threadably connected with said container, said screw cap containing a central opening; and (2) an internal annular protective wall portion (31) arranged concentrically about said central opening and extending in the **direction** of said **bottom** wall, said internal annular protective wall portion being operable to support the **bone graft** when said first container is in an inverted second vertical orientation... .. **produce** a sterilization temperature for a constant first period of time (T1) when at least the bottom portion of said container is seated in said **heating** recess; (e) a **memory** (M); (f) means (15) for inputting to said memory the measured **size** (S) of the **bone graft**; (g) means (9) connected with said memory for... .. container when said first container is in an inverted second vertical orientation; and (j) screen means (25) arranged within said first container for normally supporting the **bone graft** in spaced relation above said bottom wall when said first container is in said first vertical orientation... .. to cover said **bone graft** and to reach a predetermined level (24) in the container; (d) closing said container with a penetrable self-sealing closure member (26); (e) **heating** the container at a given temperature for a predetermined first period of time, whereby the temperature of the sterile **liquid** approaches a preselected sterilizing temperature

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<b>Applicant(s):</b>	<input type="text"/>	Institut Pasteur
<b>Inventor(s):</b>	<input type="text"/>	Smith
<b>European Classification (ECLA):</b>	<input type="text"/>	F03G7/10
<b>International Patent Classification (IPC):</b>	<input type="text" value="a61"/>	H03M1/12
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**METHOD FOR PREPARING BONE TRANSPLANTER**

**Publication number:** KR20020011164 (A)  
**Publication date:** 2002-02-08  
**Inventor(s):** EOM IN UNG [KR]  
**Applicant(s):** HUMAN TISSUE ENGINEERING CT CO [KR]  
**Classification:**  
- **international:** **A61L27/38; A61L27/00;** (IPC1-7): A61L27/38  
- **European:**  
**Application number:** KR20000044494 20000801  
**Priority number(s):** KR20000044494 20000801

**Abstract of KR 20020011164 (A)**

**PURPOSE:** A method for preparing bone transplanter is provided to obtain an excellent bone transplantation effect without occurring an inflammation and an immune rejection reaction after transplanting. **CONSTITUTION:** In the method for preparing bone transplanter, allogenic bone is collected, and soft tissue is removed from the bone. The bone is pulverized, washed, and classified into bone pieces and bone powders. The split bone pieces or bone powders are washed and defatted using ethanol and ether, respectively. The bone is dried at room temperature, and demineralized using hydrochloric acid. The demineralized bone is washed with saline solution or phosphate buffered saline, and further washed with ethanol and ether. The washed bone is dried at room temperature and lyophilized. The lyophilized bone is further classified by sizes to obtain bone transplanter.







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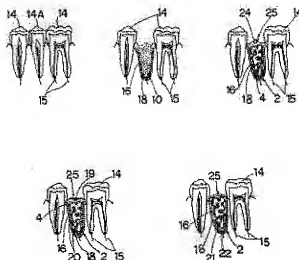
**Artificial bonelike graft and method for producing the same****Publication number:** US4277238 (A)**Publication date:** 1981-07-07**Inventor(s):** KATAGIRI MASATAKA**Applicant(s):** KATAGIRI MASATAKA**Classification:**

**- international:** A61L17/00; A61C8/00; A61K6/00; A61K35/32; A61K38/17;  
A61L27/00; A61L27/36; A61L17/00; A61C8/00; A61K6/00;  
A61K35/32; A61K38/17; A61L27/00; (IPC1-7): A01N35/02

**- European:** A61C8/00E; A61L27/36

**Application number:** US19790025730 19790330**Priority number(s):** JP19780120618 19780928**Also published as:** DE2917135 (A1) JP55045668 (A)**Cited documents:** US2347567 (A) US3126884 (A) US3127317 (A) US3573082 (A)**Abstract of US 4277238 (A)**

An artificial bonelike graft is disclosed. The graft of this invention comprises a biological material such as a bone piece and tooth taken from an animal or a human, which material is decalcified and defatted. Upon implanting the graft, it will be assimilated with the existing tissues and become a part of the living organs. A method for producing such grafts is also disclosed.



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# **LIST OF CITING DOCUMENTS**

Approximately 20 document citing **US4277238 (A)**

## **1 Process for manufacturing a bone implant**

**Inventor:** TOPOR BORIS PROF DR HABIL MED [MD] **Applicant:** JAKOB KARL [DE] ; TOPOR BORIS PROF DR HABIL MED [MD] (+1)  
**EC:** A61L27/36 **IPC:** A61L27/36; A61F2/28; A61L27/00; (+3)  
**Publication info:** EP1380312 (A1) — 2004-01-14

## **2 Multi-step process for making a bone regeneration paste**

**Inventor:** TOPOR BORIS PROF DR HABIL MED [MD] **Applicant:** JAKOB KARL DIPL ING DR H C [DE] ; TOPOR BORIS PROF DR HABIL MED [MD] (+1)  
**EC:** A61L27/36 **IPC:** A61L27/36; A61F2/28; A61L27/00; (+2)  
**Publication info:** EP1380311 (A1) — 2004-01-14

## **3 METHOD FOR REMOVAL OF WATER ASSOCIATED WITH BONE WHILE DIMINISHING THE DIMENSIONAL CHANGES ASSOCIATED WITH LYOPHILIZATION**

**Inventor:** BOYCE TODD M **Applicant:** OSTEOTECH INC [US]  
**EC:** A61F2/28; A61F2/46G; (+1) **IPC:** A01N1/02; A61F2/28; A61F2/46; (+12)  
**Publication info:** WO0215688 (A2) — 2002-02-28

## **4 METHOD OF TREATING AND DEHYDRATING BONE FOR IMPLANTATION AND RESULTING BONE**

**Inventor:** BOYCE TODD M ; SHIMP LAWRENCE A **Applicant:** OSTEOTECH INC [US]  
**EC:** A61F2/28; A61F2/46G; (+1) **IPC:** A61F2/28; A61F2/46; A61L27/36; (+8)  
**Publication info:** WO0215948 (A2) — 2002-02-28

## **5 Bone graft delivery surgical instruments**

**Inventor:** SMITH MARGARET E [US] ; CUSICK MICHAEL J [US] **Applicant:** HOWMEDICA OSTEONICS CORP [US]  
**EC:** A61F2/46A **IPC:** A61B17/56; A61F2/46; A61M5/315; (+13)  
**Publication info:** US6142998 (A) — 2000-11-07

## **6 Tooth implant and method for implantation**

**Inventor:** FILHO NEY DE SOUZA BLAZZIO [BR] **Applicant:** FILHO, NEY DE SOUZA BLAZZIO  
**EC:** A61B17/16H; A61C8/00; (+1) **IPC:** A61B17/16; A61C8/00; A61F2/00; (+8)  
**Publication info:** US6089867 (A) — 2000-07-18

## **7 Method and apparatus for implantation**

**Inventor:** JONES SHEDRICK D [US] **Applicant:** JONES, SHEDRICK D  
**EC:** A61C8/00; A61C8/00F2; (+1) **IPC:** A61C8/00; A61F2/46; A61C8/00; (+2)  
**Publication info:** US6135772 (A) — 2000-10-24

## **8 Organic dental repair material for fillings etc. for human teeth**

**Inventor:** METZNER KLAUS [DE] **Applicant:** METZNER KLAUS [DE]  
**EC:** A61K6/02 **IPC:** A61K6/02; A61K6/02; (IPC1-7): A61K6/02; (+1)  
**Publication info:** DE4415671 (A1) — 1995-11-16

## **9 Visualization system for retrieval, identification, and positioning of biological samples for subsequent microscopic examination**

**Inventor:** CAMIENER GERALD W [US] **Applicant:** CAMIENER GERALD W [US]

EC: G01N1/30

IPC: G01N1/30; G01N1/30; (IPC1-7): G01N1/30;  
(+1)

Publication info: US5290706 (A) — 1994-03-01

**10 Method and means for fixing a joint prosthesis.**Inventor: BRUCE INGRID [SE]; BRUCE LARS [SE] Applicant: IDEA AB [SE]  
[SE]

EC: A61F2/46A; A61F2/30B1; (+2)

IPC: A61F2/30; A61F2/36; A61F2/46; (+10)

Publication info: EP0501595 (A1) — 1992-09-02

**11 PROTEIN COMPOSITION INDUCING A BINDING BETWEEN PARTS OF MINERALIZED TISSUE**

Inventor: HAMMARSTROEM LARS [SE]; BLOMLOEF LEIF [SE] (+1) Applicant: BIOVENTURES NV [NL]

EC: A61K6/00B; A61K35/32; (+1)

IPC: A61K38/00; A61K6/00; A61K35/32; (+10)

Publication info: US5098891 (A) — 1992-03-24

**12 Biologic absorbable implant material for filling and closing soft tissue cavities and method of its preparation**

Inventor: REDL HEINZ [AT]; SCHLAG GUENTHER [AT] (+1) Applicant: IMMUNO AG [AT]

EC: A61L24/00F; A61L24/10A; (+1)

IPC: A61L24/00; A61L24/10; A61L27/36; (+3)

Publication info: US5139527 (A) — 1992-08-18

**13 Bone allograft material and method**

Inventor: SIRES BRYAN S [US]

Applicant: UNIV NORTHWESTERN [US]

EC: A61F2/28; A61L27/36

IPC: A61F2/28; A61L27/36; A61F2/00; (+8)

Publication info: US5112354 (A) — 1992-05-12

**14 Process for disinfecting musculoskeletal tissue and tissues prepared thereby**

Inventor: O'LEARY ROBERT K [US]

Applicant: OSTEOTECH INC [US]

EC: A61K31/00; A61K31/045; (+2)

IPC: A61K31/00; A61K31/045; A61L2/00; (+6)

Publication info: US5298222 (A) — 1994-03-29

**15 Stents for bone augmentation by surgical implant**

Inventor: BARRETT GARRET D [US]

Applicant: BARRETT GARRET D

EC: A61C8/00; A61F2/28; (+2)

IPC: A61C8/00; A61F2/28; A61F2/30; (+6)

Publication info: US4684370 (A) — 1987-08-04

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# METHOD OF TREATING AND DEHYDRATING BONE FOR IMPLANTATION AND RESULTING BONE

**Publication number:** WO0215948 (A2)

**Publication date:** 2002-02-28

**Inventor(s):** BOYCE TODD M; SHIMP LAWRENCE A

**Applicant(s):** OSTEOTECH INC [US]

**Classification:**

- international: **A61F2/28; A61F2/46; A61L27/36; A61F2/00; A61F2/30; A61F2/28; A61F2/46; A61L27/00; A61F2/00; A61F2/30; (IPC1-7): A61L27/00**

- European: A61F2/28; A61F2/46G; A61L27/36

**Application number:** WO2001US26553 20010824

**Priority number(s):** US20000644521 20000824

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 WO0215948 (A9)  
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 EP1311309 (A2)

## Cited documents:

 WO9519797 (A1)  
 US6162258 (A)  
 US4277238 (A)  
 WO9951170 (A1)  
 WO9968967 (A1)

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## Abstract of WO 0215948 (A2)

Monolithic bone intended for implantation is treated in order to conserve its mechanical strength during dehydration and subsequent packaging and to maintain the strength of the bone during the storage period preceding the rehydration and implantation of the bone. The method of treatment comprises contacting the bone with a mechanical strength-conserving amount of at least one biocompatible mechanical strength-conserving agent, the agent being a liquid organic material which is capable of penetrating and remaining in the bone during its dehydration, packaging and storage, dehydrating the bone containing the mechanical strength-conserving agent and packaging the dehydrated bone.

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